

# **Agricultural Enterprises Management in an Urban-Industrial Society**

**A GUIDE TO  
INFORMATION SOURCES**

**Portia Christian**

CD1969529

Z

5074

.F25

C49

F373091

**Library**  
**University of Texas**  
At San Antonio





RENEWALS 091-4574

## DATE DUE

MAR 21

Apr 18





**Agricultural Enterprises  
Management in an  
Urban-Industrial Society**

**OTHER BOOKS IN THE  
MANAGEMENT INFORMATION GUIDE SERIES  
Write for Complete List**

**ELECTRONIC INDUSTRIES INFORMATION SOURCES**—Edited by Gretchen R. Randle, 1968 (MIG No. 13)

**INTERNATIONAL BUSINESS AND FOREIGN TRADE INFORMATION SOURCES**—Edited by Lora Jeanne Wheeler, 1968 (MIG No. 14)

**COMPUTERS AND DATA PROCESSING INFORMATION SOURCES**—Edited by Chester Morrill, Jr., 1969 (MIG No. 15)

**FOOD AND BEVERAGE INDUSTRIES**—Edited by Albert C. Vara, 1970 (MIG No. 16)

**COMMERCIAL LAW INFORMATION SOURCES**—Edited by Julius J. Marke and Edward J. Bander, 1970 (MIG No. 17)

**ACCOUNTING INFORMATION SOURCES**—Edited by Rosemary R. Demarest, 1970 (MIG No. 18)

**INVESTMENT INFORMATION**—Edited by James B. Woy, 1970 (MIG No. 19)

**RESEARCH IN TRANSPORTATION**—Edited by Kenneth U. Flood, 1970 (MIG No. 20)

**ETHICS IN BUSINESS CONDUCT**—Edited by Portia Christian with Richard Hicks, 1970 (MIG No. 21)

**PUBLIC RELATIONS INFORMATION SOURCES**—Edited by Alice Norton, 1970 (MIG No. 22)

**AMERICAN ECONOMIC AND BUSINESS HISTORY INFORMATION SOURCES**—Edited by Robert W. Lovett, 1971 (MIG No. 23)

**INSURANCE INFORMATION SOURCES**—Edited by Roy Edwin Thomas, 1971 (MIG No. 24)

**COMMUNICATION IN ORGANIZATIONS**—Edited by Robert M. Carter, 1972 (MIG No. 25)

**PUBLIC AND BUSINESS PLANNING IN THE UNITED STATES**—Edited by Martha B. Lightwood, 1972 (MIG No. 26)

**NATIONAL SECURITY AFFAIRS**—Edited by Arthur D. Larson, 1973 (MIG No. 27)

**OCCUPATIONAL SAFETY AND HEALTH**—Edited by Theodore P. Peck, 1974 (MIG No. 28)

**CHEMICAL INDUSTRIES INFORMATION SOURCES**—Edited by Theodore P. Peck, 1978\* (MIG No. 29)

**PURCHASING INFORMATION SOURCES**—Edited by Douglas C. Basil, Emma Jean Gillis, and Walter R. Davis, 1977 (MIG No. 30)

**EXECUTIVE AND MANAGEMENT DEVELOPMENT FOR BUSINESS AND GOVERNMENT**—Edited by Agnes O. Hanson, 1976 (MIG No. 31)

**MANAGEMENT PRINCIPLES AND PRACTICE**—Edited by K.G.B. Bakewell, 1977 (MIG No. 32)

**MANAGEMENT AND ECONOMICS JOURNALS**—Edited by Vasile Tega, 1977 (MIG No. 33)

**DEVELOPING ORGANIZATIONS**—Edited by Jerome L. Franklin, 1978\* (MIG No. 35)

**HEALTH SCIENCES AND SERVICES**—Edited by Lois F. Lunin, 1978\* (MIG No. 36)

\*in preparation

MANAGEMENT  
INFORMATION  
GUIDE : : 34

# Agricultural Enterprises Management in an Urban-Industrial Society

A GUIDE TO  
INFORMATION SOURCES

Portia Christian

GALE RESEARCH COMPANY • BOOK TOWER • DETROIT, MICHIGAN



**Library of Congress Cataloging in Publication Data**

Christian, Portia, 1908-

Agricultural enterprises management in an urban-industrial society.

(Management information guide ; v. 34)

Includes indexes.

1. Farm Management—Bibliography. 2. Agriculture—Bibliography. 3. Food industry and trade—Bibliography.

I. Title. II. Series.

Z5074.F25C49

[S561]

016.3381

76-27856

**Copyright © 1978 by Gale Research Company**

No part of this book may be reproduced in any form without permission in writing from the publisher, except by a reviewer who wishes to quote brief passages or entries in connection with a review written for inclusion in a magazine or newspaper. Manufactured in the United States of America.

**LIBRARY**

**The University of Texas**

**At San Antonio**

Dedicated to the  
Philadelphia Society for Promoting Agriculture, 1785—

## VITA

Portia Christian, born in central Indiana, attended Oxford College for Women, Oxford, Ohio, 1926-28. She received her B.A. degree from Butler University in 1958, and her Certificate of Copyrevise and Proofreading from New York Employing Printers in 1959. In 1961, she completed her M.L.S. degree at Columbia University School of Library Service.

From 1934-55 Ms. Christian was associated with the Caldwell, VanRiper, Inc. advertising agency. At Indiana University she was an administrative assistant and instructor in the Department of Library Science, 1961-63, as well as an assistant business librarian in the School of Business, 1963-68. She worked as librarian at the Academy of Food Marketing, St. Joseph's College from 1968-74, and as a consultant to a food company in 1975. Since moving to Perry, Georgia in August 1976, she has done volunteer work in the library of the South Side Elementary School.

Ms. Christian has developed systems and procedures for training library assistants, compiled bibliographies for use by the food industry and teaching aids for professors in food marketing and business administration at St. Joseph's College.

Ms. Christian is the editor of ETHICS IN BUSINESS CONDUCT (Detroit: Gale Research Co., 1970).



## CONTENTS

Preface .....	ix
Appreciation .....	xi
Introduction .....	xiii
<b>Part 1 - The Business of Farming</b>	
Chapter 1 - The Business of Farming .....	3
Chapter 2 - The Communicators .....	33
Chapter 3 - Influencing Factors .....	43
Chapter 4 - Reference Materials Related to Part 1 .....	51
<b>Part 2 - Agricultural Enterprises--Field Crops</b>	
Chapter 1 - Agronomy .....	65
Chapter 2 - Plants .....	75
Chapter 3 - Field Crops .....	79
Chapter 4 - Forage Crops: Pasture and Range Management ....	91
Chapter 5 - Weeds, Insects, Control of Pests .....	97
Chapter 6 - Reference Materials Related to Part 2 .....	105
<b>Part 3 - Agricultural Enterprises--Horticultural Crops</b>	
Chapter 1 - Horticultural Crops--General .....	119
Chapter 2 - Fruit Production .....	121
Chapter 3 - Vegetable Crops .....	135
Chapter 4 - Greenhouse Culture and Hydroponics .....	137
Chapter 5 - Mushroom Production .....	141
Chapter 6 - Reference Materials Related to Part 3 .....	143
<b>Part 4 - Agricultural Enterprises--Livestock</b>	
Chapter 1 - Animal Science and Livestock Management .....	153
Chapter 2 - Beef Cattle Management .....	165
Chapter 3 - Dairy Cattle Management .....	171
Chapter 4 - *Swine Production Management .....	177
Chapter 5 - Sheep Management .....	185
Chapter 6 - The Dairy Goat .....	189
Chapter 7 - Poultry and Egg Production Management .....	191

## Contents

---

Chapter 8 - Animal Waste Management .....	201
Chapter 9 - Reference Materials Related to Part 4 .....	203
Part 5 - Other Agricultural Enterprises	
Chapter 1 - Rabbits for Meat .....	215
Chapter 2 - Bees and Beekeeping .....	217
Chapter 3 - Fish Culture .....	223
Chapter 4 - Maple Syrup .....	231
Chapter 5 - Reference Materials Related to Part 5 .....	233
Part 6 - Urban to Rural Move .....	239
Part 7 - Appendixes	
Appendix A - List of Publishers .....	245
Appendix B - List of Periodicals .....	257
Appendix C - List of Organizations .....	263
Indexes	
Author Index .....	271
Title Index .....	283
Subject Index .....	299

## PREFACE

Agriculture is the nation's largest industry. Its assets, totaling \$531 billion, amount to about three-fifths of the capital assets of all manufacturing corporations in the United States. It is also the nation's largest employer; 4.4 million workers are employed on slightly fewer than 3 million farms.

Agriculture, specifically farming, has become a complex business. Management of this dynamic operation requires careful planning, coordination, and budgeting to optimize production. Unlike industrial firms that can fabricate hundreds of items to specification, the farmer is restricted by the fact that plants and animals are living species whose "production" is subject to biological factors that influence growth and development. Add to this the influence of environmental forces beyond the farmer's control, and the complexity increases. As a result of agricultural research, man can alter varieties to improve yields and, in some instances, has been successful in shortening the growth cycle. However, because production and growth are sequential, they require careful scheduling and planning.

Agricultural products compete in a marketing system that is structured and oriented toward specific consumer demands. Changes in supply and demand that are caused by weather, market conditions, national and international needs, and the general economic environment compound the problems of farm managers trying to allocate limited resources in producing and marketing their products.

Farmers wishing to improve their production and marketing methods can utilize the results of the agricultural research conducted by the USDA, state experiment stations, land grant universities, and agribusiness suppliers. They can also obtain help with current problems by consulting the federal-state extension service and/or the various publications of the research agencies. These resources, combined with individual experiences, have enabled the farm manager to increase his production by using his land more efficiently.

In spite of the risks and complexities, farming affords a way of life that is both satisfying and rewarding to many people. Improvements in education, communication, transportation, and services have enhanced shifts in population



## Preface

---

from urban to rural areas in some regions of the country.

This book provides an overview of the practices and problems in agricultural management. It is a compilation of the most pertinent literature on the management of agricultural enterprises in an urban-industrial society. It can be useful to the student, the policy-maker, and the farm manager; it may also be useful to the consumer interested in understanding the factors that influence food prices.

I have known Portia Christian since 1968 when she joined the Academy of Food Marketing at Saint Joseph's College and was assigned to organize and strengthen the collection of the Campbell Library. As a result of her efforts, this library contains one of the most complete collections of information on food marketing. As chairman of the Food Marketing Department and as a member of the teaching faculty of Saint Joseph's College, I worked with Portia to encourage student use of the many sources of information in the collection. I know how she digs into a subject and interprets it to students. Furthermore, she has a deep and abiding interest in the countryside and its conservation. I think this book will be a valuable reference to the sources of agricultural information.

Harold S. Ricker  
Chairman, Agricultural Marketing  
Research Institute  
Agricultural Research Service  
U.S. Department of Agriculture  
Beltsville, Maryland

## APPRECIATION

My deep appreciation is extended to all who helped make the preparation of this volume possible. In Philadelphia, two libraries became my near-home bases. Josephine Savaro, librarian, St. Joseph's College, made me welcome as a campus alumna. Two of her staff members gave me special assistance: Delores McCaughan handled loans from another location on campus, and Rosemary Hsieh located many books through interlibrary loan.

At the U.S. Department of Agriculture Forest Service Library, Philip Perkins, librarian, and his aide, Dorothy Higgins, provided agricultural bibliographic sources for use during my many visits there.

For research privileges in other Philadelphia collections, my thanks to Janis S. Heald, librarian, School of Veterinary Medicine, University of Pennsylvania; Julie Morris, horticultural librarian, and her assistant Jane Talarico, Pennsylvania Horticultural Society; Marguerite Zulik, librarian, THE FARM JOURNAL; Doris F. Zimmermann, librarian, and Barbara A. Turnbull, supervisor, technical services, Federal Reserve Bank of Philadelphia; the staff of the Public Documents Department of the Free Library of Philadelphia.

On my out-of-town trips, resources were made available by Emory Cheek and Frances Whitham, librarians, and Dr. Charles F. Douglas, head, Agronomy Department, University of Georgia Coastal Plains Station, Tifton; Aubrey H. Mitchell, librarian, University of Tennessee Agricultural Library; Henry Murphy, librarian, and Paul Stott, lending librarian, Alfred R. Mann Library, Cornell University, Ithaca, New York; and Joan Szendrey, librarian, Cook College, Rutgers University, New Brunswick, New Jersey. Julia Merrill, liaison for agency libraries, National Agricultural Library, gave generously of her time during my visit to Beltsville, Maryland, and in correspondence afterwards.

Chia-Lin Wong, agronomist and head of science cataloging, University of California, Riverside, gave valued assistance in response to my request to examine and annotate several citations.

Special recognition is made of friends who gave extraordinary support for my

## Appreciation

---

research--Bessie Greenawalt, Joan Carnahan, and Kate Morrissey, who wisely prodded me and typed the final draft of the manuscript.

Thanks to my copyeditor, Sandra Lee Benigna, and those who assisted me in answering her queries from the libraries mentioned above and especially H.R. Stuckey, head, Reports and Records Section, and Fidelis Dougherty, supervisor, Records Unit, Statistical Reporting Service, U.S. Department of Agriculture, Washington, D.C.; Dedria Bryfonski, Claudia Dembinski, and Donna Vocke at Gale Research Company; Maureen and Joe Hauge of the Book Mart, Gardiner, New York; and my nephew James D. Christian, Perry, Georgia.

The last and one of the most valuable contributions on this volume preparation was given by Judy Golden, executive director of Houston County (Georgia) Public Libraries. Mrs. Golden loaned me the LIBRARY OF CONGRESS SUBJECT HEADINGS to assist in preparation of the subject index.

Thanks to Paul Wasserman for insisting that I undertake this work. It has been a stimulating experience.



## INTRODUCTION

The purpose of this volume is to focus on management of agricultural enterprises and the changes resulting from the pressures to produce industrially the standardized commodities demanded in the urban-consumer market structure. The selections from the literature will acquaint the reader with the methods used to manage agricultural production in order to provide millions of people with a varied food supply. Using the subject index, the student, the concerned consumer, the agricultural advisor, and the practicing farmer can locate quickly references of interest. The practicing farmer will of course turn first to his county agent or to the agricultural extension service at his state university for the latest research findings, bulletins, and farm periodicals.

This volume was compiled by collecting relevant citations from bibliographic sources, and then examining copies of books and reports to obtain information for the annotations. With a few exceptions, the books and reports listed here were published in the English language between 1960 and 1975. Some reprints of earlier works are also included.

Annotations for books on much the same subject aim to bring out the different contributions of each author, with special effort to ascertain the author's intent. There was no attempt to determine the best book on a given subject. All joint authors listed on the title page are included in the citations because of specialty contributions.

When a book or report was not available for examination, its citation was included in the chapter most relevant to the book's title. Also, when a newer edition was not yet available, the older edition was examined for information. The annotation then advises the reader to be on the alert for the later edition.

The bibliographic citation does not mention general indexes; however, it does include author, subject, and special indexes. Reference lists at the ends of chapters are denoted in the citation by "chapter biblios." Bibliographies and reading lists that are separate entities in a book are designated by "reading list."

## Introduction

---

Publications from agricultural agencies, extension services, and experiment stations are included where they enhance the coverage on a given subject. Since this literature is subject to frequent revision and update, the reports cited here merely indicate the type of information issued by these agencies. U.S. government statistical serial publications are included in the various chapters, where applicable. These, too, are subject to change and revision, but the titles are current as of March 1976. The commercial and association journals listed here are subject to title and publication revision.

The references in this volume focus on farming enterprises that produce food plants and animals. The volume does not address either the problems of world hunger and assistance to developing nations, or the management of agribusiness. In this work, the term "agribusiness" refers to the products and services of firms supplying farm inputs.

The volume is divided into six parts, each containing a number of chapters. Part 1 is devoted to the business of farming, the communicators who transfer research and technology to the farm manager, and those factors in society which influence and regulate agricultural production. Part 2 deals with soil and water management and with field crops grown for food and forage. Part 3 is about the horticultural crops--fruits, vegetables, and so forth--and their culture and marketing. Part 4, "Agricultural Enterprises--Livestock," covers farm animals, their breeding, feeding, health, and marketing. Part 5 describes agricultural enterprises which are either auxiliaries to larger farm operations or the principal business of small farms. Part 6 is a short review of the urban-to-rural movement. The appendixes in part 7 provide the names and addresses of publishers, periodicals, and organizations.

The reader can locate material of interest by using the table of contents and/or the indexes to authors, titles, and subjects. The works cited can usually be found in most large libraries, particularly those serving an agricultural community. Books not included in the reader's local library can be obtained on interlibrary loan. The local library can borrow books and reports from other collections through a network of cooperating libraries. Even the smallest township library can tap the resources of the state library.

Portia Christian  
Philadelphia

Part 1

THE BUSINESS OF FARMING





## Chapter 1

### THE BUSINESS OF FARMING

#### INTRODUCTION TO AGRICULTURE AND FARM BUSINESS

Abbitt, Ben; White, F[red]. C.; and Kerns, W.R. "The Effects of Urban Sprawl on Agricultural Land Use in Middle Georgia Area." *GEORGIA AGRICULTURAL RESEARCH* 16 (Winter 1975): 12-15.

Reports a study of the effects of urban area spread on the use of land in the middle Georgia planning and development area.

Sellers of eighty-nine tracts of land were asked to complete a questionnaire on their land transfers. The most common reasons for transfer were oppressive increases in property tax, opportunity for profit afforded by attractive prices, and urban pressure.

Dr. Fred C. White, one of the members of this research team, is engaged in a three-year study "to evaluate the role of taxation in rural development" (*THE PAPER*, November 1974, p. 2). White is especially interested in the influence of increased property tax.

Billard, Jules B. "More Food for Our Multiplying Millions; the Revolution in American Agriculture." *NATIONAL GEOGRAPHIC MAGAZINE* 137 (February 1970): 147-85. Color photographs by James P. Blair.

An overview of American agriculture.

Brady, Nyle C., ed. *AGRICULTURE AND THE QUALITY OF THE ENVIRONMENT*. Symposium presented at 133d meeting of the American Association for the Advancement of Science, December 1966. AAAS Publication no. 85. Washington, D.C.: 1967. 475 p. Illus., maps, author and subject indexes.

Describes the interaction between agriculture and the quality of the environment. Considers the influences of air quality; water quality, including pesticide residues, wastes, salinity, and so forth; soil pollution—from pesticide buildup, heavy metal contamination, and fertilizer buildup.

Breimyer, Harold F. INDIVIDUAL FREEDOM AND THE ECONOMIC ORGANIZATION OF AGRICULTURE. [Urbana: University of Illinois Press, 1965]. vi, 314 p.

A cross-disciplinary study with a wealth of detail about developments in agriculture and the business of farming. The author first looks from the farmer's independent view, then from the interdependent economic aspects affecting the taxpayer.

Reviews federal legislation and programs affecting agriculture and the farmer. Discusses the public services provided to the farmer by the government--cooperative extension services, college and university agricultural experiment research, the Department of Agriculture, Agricultural Research Service, Soil Conservation Service.

Pinpoints differences between farming and manufacturing. Describes the biology of plants and animals, and the sequential processes in agricultural production. Management is now foremost in the successful operation of the farm. Presents seven courses of action for the farmer who wishes to remain independent of the pressures to industrialize and yet be able to compete in the structured marketplace (pp. 278-79).

Chamber of Commerce of the United States. THE CHANGING STRUCTURE OF U.S. AGRIBUSINESS AND ITS CONTRIBUTION TO THE NATIONAL ECONOMY. Washington, D.C.: 1973. 30 p.

The term "agribusiness" is used in this report in reference to farm producers and the supplier industry, and their interdependence.

Structural changes in agriculture, increased coordination in production and marketing, importance of the contributions of research and development, and the technical assistance given by industry suppliers are briefly analyzed. Also covers the concerns and conflicts resulting from changes in the structure of agriculture.

Chang, P'ei. AGRICULTURE AND INDUSTRIALIZATION; THE ADJUSTMENTS THAT TAKE PLACE AS AN AGRICULTURAL COUNTRY IS INDUSTRIALIZED. Cambridge, Mass.: Harvard University Press, 1949. Reprint. New York: Greenwood Press, 1969. 282 p. Illus.

The 1949 edition was examined.

The author gives a picture of the adjustments between agriculture and manufacturing (as distinct from business and trade) during the process of industrialization.

In his conclusions, the author cites four factors that are essential to improvements in agricultural production: industrial development, transportation reform, legal regulation, and redistribution of land.

Clawson, Marion; Held, R. Bumell; and Stoddard, Charles H. LAND FOR THE FUTURE. Baltimore, Md.: Johns Hopkins University Press, 1960. 585 p.

Published for Resources for the Future. Chapter 4: "Agricultural Land Use," pp. 194-274; chapter 6: "Land for Grazing," pp. 361-411.

CORPORATE FARMING AND THE FAMILY FARM. Published under the auspices of the Agricultural Committee of the Greater Des Moines Chamber of Commerce with the cooperation of the Iowa State University Center for Agricultural and Economic Development. Ames: Iowa State University Press, [1970]. ix, 118 p.

Foreword reviews the work of the National Farm Institute since the first institute in 1937.

Papers cover economics and emotions involving the family farm and corporate farming; agricultural corporations today; incorporation for the family farm; rural poverty and national policy; farm size and land values; mechanisms for financing farm growth.

Chapter 14, pages 111-18, written by Don Paarlberg, looks at the forces that are modernizing farming, and the scope of the technical information that the farmer must acquire to successfully manage his operation.

Duckham, Alec Narraway, et al. FARMING SYSTEMS OF THE WORLD. London: Chatto & Windus, [1970]. 560 p. Illus., 10 pls. (one foldout), maps (one foldout).

For students, researchers, and others working in agriculture and its related industries.

Part 1 analyzes location factors. Part 2 covers farming systems, first in Canada and the United States, then in other regions of the world.

Evans, Everett F., and Donahue, R[oy].L. EXPLORING AGRICULTURE; AN INTRODUCTION TO FOOD AND AGRICULTURE. Englewood Cliffs, N.J.: Prentice-Hall, 1969. 471 p. Illus., chapter bibliographies.

Compares agriculture in the fifty states, in terms of land area in farms, major crops, and rank in production.

Provides a list of useful books; the titles of the YEARBOOK OF AGRICULTURE for issues 1948-67; addresses of state extension service directors; state land-grant colleges, and state soil conservation offices; directory of state and territorial library extension agencies.

FARM GOALS IN CONFLICT: FAMILY FARM, INCOME, FREEDOM, SECURITY. Ames: Iowa State University Press, [1963]. x, 251 p.

Position papers from the second Conference on Goals and Values in Agriculture, held at the Center for Agricultural and Economic Development, Iowa State University, 1963.

Also includes an analysis of the papers presented in relation to economic growth, social change, and national goals. The last chapter summarizes the dialog and debate that took place on the last day of the conference.

FOOD FOR AMERICA'S FUTURE; TWELVE OUTSTANDING AUTHORITIES DISCUSS THE COUNTRY'S ABILITY TO FEED ITS MULTIPLYING MILLIONS.

New York: McGraw-Hill Book Co. for the Ethyl Corporation, 1960. 179 p.

The Ethyl Corporation asked specialists in agricultural research, soil science, education, farm machinery and power, agricultural chemicals, food processing and marketing, and economics to provide briefs on their fields with regard to past, present, and future developments in improving food production in the United States.

When this book was published, the writers were looking ahead to 1975. However, the essays furnish useful background information for the above-mentioned fields.

Frey, H. Thomas, and Otte, Robert C. CROPLAND FOR TODAY AND TOMORROW. Agricultural Research Report no. 291. Washington, D.C.: U.S. Department of Agriculture, 1975. iii, 17 p. Illus., maps.

Cropland components are defined (page iii).

Summarizes recent changes in cropland use, since the suspension of federal set-aside programs in 1973. Evaluates existing and potential cropland on a regional basis. Discusses factors that retard rate of development of new land: size of tract, ownership patterns, development, crop alternatives, competition with other uses.

Gossling, W.F. PRODUCTIVITY TRENDS IN A SECTORAL MACRO-ECONOMIC MODEL; A STUDY OF AMERICAN AGRICULTURE AND SUPPORTING INDUSTRIES 1919-1964. London: Input-Output Co., [1972]. 314 p. Illus., tables.

An American study using economic statistics for the United States, prepared while the author was on fellowship at the University of Manchester, England. Agriculture was selected for the study because its direct labor force has been reduced 50 percent in the past forty-five years and its capital stock has encompassed more and more products made by other industries.

Points to the conflicts of interest within the agricultural subsystem. Tables illustrate and support the text.

Higbee, Edward. FARMS AND FARMERS IN AN URBAN AGE. New York: Twentieth Century Fund, 1963. xii, 183 p. Tables, maps.

Reviews changes from the old to new technology in farming, and the American view of the farmer. Examines the American farmer on various levels of activity.

Krebs, Alfred H. AGRICULTURE IN OUR LIVES, AN INTRODUCTION TO AGRICULTURAL BUSINESS AND NATURAL RESOURCES. 3d ed. Danville, Ill.: Interstate Printers & Publishers, [1973]. x, 733 p. Illus., diags., charts, chapter bibliis.

Provides a general background for understanding the importance of agriculture in the lives of everyone.

Chapter 4: "Agricultural Occupations," pp. 89-123, lists careers in production agriculture, agricultural professions, agricultural services, and in businesses and industries related to agriculture. Cites for each career: opportunities available, qualifications needed, duties performed.

For further background, the book has comprehensive coverage of farm animals, management for raising healthy animals, and field and horticultural crops--selection, planning, and production practices, as well as insect and disease control.

Organisation for Economic Development. AGRICULTURAL PROJECTIONS FOR 1975 AND 1980: EUROPE, NORTH AMERICA, JAPAN, OCEANIA, PRODUCTION AND CONSUMPTION OF MAJOR FOODSTUFFS. Paris: 1968. 128 p. Illus., tables, charts.

Introduces the study by describing the methods and general trends underlying the projections. Gives commodity forecasts for grains, rice, sugar, beef and veal, mutton and lamb, pig meat, poultry and eggs, milk and milk products.

Ray, Victor K. THE CORPORATE INVASION OF AMERICAN AGRICULTURE. Denver: National Farmers' Union, 1968. vi, 103 p. Chapter bibliis.

Designed for educational purposes, not as a complete study of changes underway in American agriculture. Evidence presented has been gathered from farmers and members of the NFU staff. Discusses the corporate invasion of agriculture by nonfarm interests and its effect on farm markets, natural resources, and the rural community. Discusses political aspects and methods of limiting the farming operations of nonfarmer interests.

Roy, Ewell Paul. CONTRACT FARMING USA. Danville, Ill.: Interstate Printers & Publishers, [1963]. 572 p. Illus., charts, tables, chapter bibliis., author and subject indexes.

This is a synthesis of information which was published on contract farming and vertical integration during the decade preceding 1963. Covers in detail the enterprises involved in coordinated farming--



poultry, eggs, and turkeys; beef cattle, sheep, hogs; dairy cows; seed, field, and horticultural crops.

### LAND AND THE LAW

Beuscher, Jacob Henry. *LAW AND THE FARMER*. 3d ed. New York: Springer Publishing Co., [1960]. ix, 406 p.

Part 1 covers law and its enactment, courts as lawmakers, important divisions of law.

Part 2 discusses legal problems involved in acquiring or transferring a farm; part 3, transferring the family farm from one generation to the next. Part 4 discusses the legal aspects of operating a farm, such as taxation, unsecured debts, secured debts, creditor and seller, boundaries, fences, water rights, trespassing, animals and strays.

The appendix presents samples of such legal instruments as an offer to purchase a farm, a land contract, warranty and a quit claim deed, a real estate mortgage, sample abstract of title, stock share lease, a farm lease checklist, tax and depreciation checklists. Forms are included for calculating depreciation, promissory notes, and chattel mortgages.

Cartwright, John M. *FARM AND RANCH REAL ESTATE LAW*. Rochester, N.Y.: Lawyers Co-operative Publishing Co.; San Francisco: Bancroft-Whitney Co., 1972. 471 p. Subject index.

\_\_\_\_\_. 1975 Supplement for use 1975-76. 81 p.

This handbook applies the rules and principles of law to the problems of those who deal with land and its products. The author cautions a reader using this text to check a given rule of law against local state statutes and case decisions.

Paragraphs are numbered, and the case footnotes and annotations refer to these paragraphs by number. Each chapter is followed by a series of questions and answers. Indexing is by subject, with references to paragraph numbers in the text.

Concept of real property, farm leases, cropping agreements, sale value, and methods of appraisal are covered in the first three chapters.

Chapter 6: "Crops, Fences, and Farm Animals," pp. 277-95, explains ownership of crops when a farm is sold; purpose and kinds of fences; legal considerations in owning farm animals and in pasturing another's cattle; livestock transportation and liability of carrier.

Chapter 7: "Water Rights and Sources for Farm and Ranch," pp. 297-334, covers capture of waters--riparian and appropriation

rights, underground sources, springs, and so on. Conveyances and contracts for use of surface sources are described.

There is coverage in chapter 8 of federal marketing regulations, such as quotas for rice and peanuts; perishable agricultural commodities, and the Packers' and Stockyards Act.

A glossary of real estate terms is given on pages 361-78.

Clark, Colin. THE VALUE OF AGRICULTURAL LAND. Oxford: Pergamon Press, [1973]. viii, 117 p. Illus., tables.

An economist analyzes the situations that make agricultural land valuable. Land supply is a fixed holding. Its price is such that those who hold it are content to hold it. Land has value because it can earn rent. Differences in rents of lands depend upon location, amount, and function. Clark defines rent in terms of "gross product after debiting actual and imputed payments for all other inputs."

The tables show actual U.S. land rents for 1962 in eleven states; actual land prices based on tons of wheat equivalent per hectare of land for 1962, and for the period 1780-1960.

Dalton, Patrick J. LAND LAW. London: Oyez Publishing Co., 1972. 355 p. Tables.

In introducing this book, the author remarks, "It can be disappointing to find that Land Law has more to do with paper than with soil."

Four chapters are devoted to principles of land law. There are seven chapters on the rights to the land itself, and seven chapters on the right in the land of another person.

Two chapters deal with personal rights concerning land, and a chapter each on limitation of title and registration.

There are tables of cases, statutes, and rules (pages 1-39) before the chapters begin.

Johnson, Bruce B., and Lins, David A. "Famland Leasing and Uncertainty." AGRICULTURAL FINANCE REVIEW 35 (October 1974): 65-68. Illus., tables.

The article discusses the key role which short-term rental of multi-unit land by larger, part-owner operations is playing on consolidation of farms, and the economic impact that this consolidation could have on allocation of resources.

Morrison, Fred L., and Krause, Kenneth R. STATE AND FEDERAL LEGAL REGULATION OF ALIEN AND CORPORATE LAND OWNERSHIP. Agricultural Economic Report no. 284. Washington, D.C.: U.S. Department of Agriculture, 1975. v, 99 p.

## The Business of Farming

---

An examination of existing state and federal regulations on alien and corporate ownership of farms in the United States. Legislative and judicial decisions after June 30, 1974, were not examined.

The study found no applicable federal regulations, but did uncover laws in six states that substantially limit corporate ownership.

Murray, William G. FARM APPRAISAL AND VALUATION. 5th ed. Ames: Iowa State University Press, [1969]. viii, 534 p. Illus., maps.

Emphasis in this edition is on sale rather than income value. However, an analysis of sale versus income value is included.

Presents an overview of farm appraisal and valuation, with a description of the various kinds of appraisal. Explains the procedures, legal descriptions, and maps involved in appraisals.

Chapter 8, pages 413-98, covers appraisals for tax assessment condemnation and for loans to finance farm enterprises.

Appendix A: "Legal Descriptions," pp. 501-5. Appendix D: "Data from State Assessment Manual," pp. 511-19. Appendix E: "Notes on References," pp. 520-22.

Suter, Robert C. THE APPRAISAL OF FARM REAL ESTATE. Danville, Ill.: Interstate Printers & Publishers, [1974]. 613 p. Tables, chapter bibliis.

Appraisal principles are covered in the first eight chapters of this textbook. The chapters which follow apply these principles to specific areas--farm buildings, farm loans, eminent domain condemnation.

Boxed tables: "The Origins of Farm Value," p. 19; "The Reasons for Appraisal," p. 25.

Appendix includes methods of land measurement, example of an appraisal report, organization of an appraiser's handbook, and present land value tables.

## FARM BUSINESS MANAGEMENT

American Bankers Association. Agricultural and Rural Affairs Committee. FARM MANAGEMENT BY BANKS. Washington, D.C.: [1971]. vii, 39 p. Illus. Pamphlet.

Defines farm management service. Discusses need for such a service, types of farm management, qualifications of the farm manager.

Covers such topics as preliminary farm investigation, the farm survey and check-in report, securing a good tenant, farm lease, farm management plan, visits, reports to owner, and compensation of the farm manager.

Details the types of reports and the necessary forms, including financial reports, receipts and disbursements, profit and loss statements. Tenant rating sheet for the manager's office use is also illustrated.

Babb, E.M., and Eisgruber, L.M. MANAGEMENT GAMES FOR TEACHING AND RESEARCH: FARM MANAGEMENT, FARM SUPPLY BUSINESS MANAGEMENT, DAIRY PROCESSING AND DISTRIBUTION MANAGEMENT, SUPER-MARKET MANAGEMENT. [Chicago]: Educational Methods, [1966]. 284 p. Tables, flow charts.

The table "Management Game Usage in Agricultural Economics," p. 22, shows the names of the games and their course uses.

Chapter 4: "Use of the Purdue Farm Supply Business Management Game (selling complete and concentrate feeds, bag and bulk fertilizer)," pp. 49-70. Appendix A describes the computer program for this game.

Chapter 6: "Use of the Purdue Dairy Management Game," pp. 85-98. Appendix C describes a computer program for the dairy game.

Chapter 7: "Use of the Purdue Farm Management Game," pp. 99-111. This game to be conducted on principles discussed in chapter 3: "Administration of Business Games," pp. 33-48. See also appendix D, and/or the IBM 1620 Users Library Program description.

          . PURDUE FARM MANAGEMENT GAME MANUAL. Chicago: Educational Methods, [1966]. Unpaged. Loose-leaf.

Includes forms for decision making. Refer to the above-mentioned bound edition for a discussion of coverage.

Bradford, Lawrence A., and Johnson, Glenn L. FARM MANAGEMENT ANALYSIS. New York: John Wiley & Sons; London: Chapman & Hall, [1953]. 450 p.

Considers functions of a farmer as a manager--observing, thinking, analyzing the situations and making further observations; making decisions on the basis of the analysis; acting on these decisions and accepting responsibility for the actions.

Explains value of input/output analysis for farm managers.

Case, Harold Clayton M.; Johnson, Paul E.; and Buddemeier, Wilbur D. PRINCIPLES OF FARM MANAGEMENT. 2d ed. Chicago: J.B. Lippincott Co., [1960]. 467 p. Illus.

This introductory text has a broad coverage of topics pertinent to farm management. Much of the book is devoted to appraising farm resources, planning land use, and selecting livestock and power machinery.

Both sources of and uses for economic information are covered in chapter 13.

Chapter 18: "Farm Tenancy and Farm Leases," pp. 378-406, gives the historical development and geographic distribution of tenancy, its economic and social aspects, and government policy in regard to farm leases. Farm business agreements and leases are defined and described.

The chapter also covers the major expenses in farm leasing.

Castle, Emory Neal; Becker, Manning H.; and Smith, Frederick J. FARM BUSINESS MANAGEMENT; THE DECISION-MAKING PROCESS. 2d ed. New York: Macmillan, 1972. 361 p. Illus., tables, chapter biblios.

This textbook emphasizes the importance of a records system for analyzing and budgeting farm management. Discusses the computer as an aid. Gives examples of forms used for reporting data to the computer processing service.

Presents the scope of farm management responsibilities ranging from financial planning to decisions on the type of farm enterprises--crops, livestock, or combinations--to supervision of labor, purchasing, and equipment maintenance.

Chastain, Elijah Denton; Yeager, Joseph Henry; and McGraw, E.L. FARM BUSINESS MANAGEMENT. 2d ed. Auburn, Ala.: Auburn Printing Co., [1966]. 175 p. Illus.

This study points out that profitable farm management requires an efficient operation that can respond to changes in the marketplace. Chapter topics range from getting started in farming (by purchase or reorganization) to marketing farm products in a time of changing food consumption.

The decision-making process is diagrammed on page 10.

Cornell University. New York State College of Agriculture. Department of Agricultural Economics. FARM MANAGEMENT HANDBOOK. Agricultural Economics Bulletin no. 212. Ithaca, N.Y.: 1962. 162 p.

Purpose of this bulletin is to provide extension personnel and other agricultural workers with an up-to-date economic reference for counseling farmers on farm management and planning.

Information is arranged by enterprise: dairy/poultry; fruit; vegetables; livestock. General information covers prices, credit, insurance, equipment, irrigation, buildings, management principles, business analysis.

Oriented toward New York State. Similar handbooks on farm management are published in other states.

Gray, James R. RANCH ECONOMICS. Ames: Iowa State University Press, [1968]. vii, 534 p. Illus.



This book brings economic theory and research with western stock ranches into focus on consequences of ranch management decisions.

Emphasizes the importance of record keeping to measure financial progress; the value of such records as size of grazing herd, feed usage, and crop inventories.

Table 13.2: "Summary of Economic Information Sources Available to Ranchers," pp. 505-6.

Hall, Isaac Fults. APPROVED PRACTICES IN FARM MANAGEMENT. 3d ed. Danville, Ill.: Interstate Printers & Publishers, [1966]. 260 p. Illus., chapter biblios.

Suggests sharing an enterprise or renting a farm to gain experience in farming. Father-and-son arrangements are discussed, with examples of agreement forms.

Describes the approved practices in farm enterprises--crop production, livestock management, water and soil conservation, and so on.

References are listed at end of each chapter, by state, for the agricultural experiment station bulletins. Summaries of each chapter are provided in the appendix.

Hamilton, James, and Bryant, W.R. PROFITABLE FARM MANAGEMENT. 2d ed. Englewood Cliffs, N.J.: Prentice-Hall, [1963]. 406 p. Illus., tables, maps.

Establishes principles which apply to efficient and profitable farm organization. Stresses the value of making good plans, pages 179-84. Gives sample three-year plans for the established farmer, or the renter. "Checklist for Crop Production and Efficiency in Comparison with Other Farmer Averages," p. 259.

Hedges, Trimble Raymond. FARM MANAGEMENT DECISIONS. Englewood Cliffs, N.J.: Prentice-Hall, 1963. xi, 628 p. Illus., tables, chapter biblios.

This textbook gives priority to identifying problems, determining the facts needed to find solutions, and discovering sources for the needed information.

Section 3: "Analyzing and Budgeting the Farm Business," pp. 165-280, advises on selecting and developing standards, and on testing and ranking farm enterprises.

Appendix, pages 609-15, outlines operation of legal description of property on the rectangular survey, that is, farm land being appraised for its highest use rather than agricultural use.

Herbst, J.H. FARM MANAGEMENT PRINCIPLES, BUDGETS, PLANS. 3d ed., rev. Champaign, Ill.: Stipes Publishing Co., 1974. 292 p. Tables. Paperbound.

This introductory text gives importance to the study of the farm budget and records as a basis for planning enterprises.

For the crop enterprise, the manager decides the kinds of crops to be planted and acreage for each. In the livestock enterprise, the manager must select not only the kind of farm animal, but also the breed and the method of production--breeding, raising, feeding.

Examples are given for the crop-share lease; tenant duties agreement; landlord-tenant management and business procedures forms.

Hill, Elton Brainard, and Harris, Marshall. FAMILY FARM-OPERATING AGREEMENTS. Circular Bulletin 234. Rev. ed. East Lansing: Michigan State University, Agricultural Experiment Station, [1962]. 42 p. Illus.

Agricultural experiment stations and cooperative extension services of Alaska (and others) cooperated in this study of types of family farm agreements.

The bulletin includes among types of agreements, wage and income sharing; father-son partnership; father and more than one son; incorporation of farm as a family business.

Iowa State University. College of Agriculture. MIDWEST FARM HANDBOOK. Prepared as a service to agriculture by the staff of the College of Agriculture. 7th ed. Ames: [1969]. 505 p. Illus., tables.

A reference for the beginner and for the most experienced farmer, in management of every phase of profitable agricultural enterprise. Conservation of soil and water resources is emphasized with respect to crops and farm animals. Attention is given to agricultural structures for various purposes, electric power and equipment, tractor power and machinery.

Manitoba, University of. Office of the Dean of Agriculture. PRINCIPLES AND PRACTICES OF COMMERCIAL FARMING. 2d ed. Winnipeg: 1968. 605 p. Illus. (part color), maps (part color).

A comprehensive farm management text covering all major aspects of legal organization; farm credit; insurance for crops and livestock, equipment, and other items; purchase and maintenance of equipment and machinery; farm buildings and services. Stresses functional design of buildings, with consideration for heat conduction, water vapor, ventilation, heating, and so forth.

Mortensen, William Peter, and Luening, Robert A. THE FARM MANAGEMENT HANDBOOK. 5th ed. Danville, Ill.: Interstate Printers & Publishers, 1972. 502 p. Illus., charts.

The authors distinguish between the term "ag-industry" and "agri-business" in preface to this edition. The first term is applicable to business and industry associated with farming--feed, seed fer-

tilizer, and so on. Business in agriculture is true agribusiness--the production and farm processing of food.

The first six chapters discuss factors to consider in starting to farm, and how to begin. These are followed by a section on organizing and managing for success.

Part 3 of this handbook covers the problems of adjusting farm operations to market and price conditions.

Nix, John Sydney. FARM MANAGEMENT POCKETBOOK. 3d ed. Ashford, Kent, [England]: Wye College, Department of Agricultural Economics, 1966. 90 p. Paperbound.

This pocket booklet is for farmers and others seeking information on farm management. The author emphasizes data records for good farm planning. He packs into these pages cost/hour data on labor for field work, for livestock care; costs/hours for tractors, costs for irrigation, grain drying; building costs, and others.

A fourth edition of fifty pages was issued in 1971, but was not available for examination.

Noman, L., and Conte, R.B. THE FARM BUSINESS. [London]: Longman Group, [1971]. 330 p. Tables, charts.

Illustrates the principles to be applied in assessing enterprise productivity. Stresses constant review and analysis of farm business. Recommends use of records and budgets to evaluate the crop and livestock enterprises.

Appendix D: "Agricultural Legislation" covers the important provisions.

Appendix E: "Reference Books for Further Reading," pp. [307]-8.

Robinson, D.H., ed. FREAN'S ELEMENTS OF AGRICULTURE. 15th ed. London: John Murray Publishers, 1972. 764 p.

First printed in 1892.

Chapter 25: "Farm Organization and Management," pp. 708-27, concentrates on principles and techniques as a strategy for good decision making.

Planning and organization are required for maximum profit from the resources available "and within the bounds of good husbandry."

Wallace, James J., and Beneke, Raymond R. MANAGING THE TENANT-OPERATED FARM. Ames: Iowa State University Press, [1956]. 264 p. Illus.

For farm investors, nonresident farm owners, and those who advise tenants and farm owners.

Chapters advise on selecting a tenant, developing a lease arrangement, and obtaining good performance from the tenant.

Chapter 18: "Professional Farm Management Service," pp. 248-59, describes services performed by and needed qualifications in a farm manager; contracts and kinds of reports made to owner; qualifications for membership in the American Society of Farm Managers and Rural Appraisers.

Yang, W.Y. METHODS OF FARM MANAGEMENT INVESTIGATIONS FOR IMPROVING FARM PRODUCTIVITY. Agricultural Development Paper no. 80. Rome: Food and Agriculture Organization of the United Nations, 1965. 258 p. Reading list.

Describes the farm business survey and its utility in studying farm production-cost problems. Includes forms for gathering data.

Enterprise input-output costs, farm work efficiency, machinery costs and use are among the studies discussed.

References are listed on pages 254-58.

### PLANNING THE FARM ENTERPRISES

Barnard, Christopher Stephen, and Nix, J[ames].E. FARM PLANNING AND CONTROL. London: Cambridge [University Press], 1973. viii, 549 p. Illus., diags., tables, reading list.

Farm management in Great Britain. This text for intermediate college courses has valuable material for farm managers. Mathematics is at a minimum. Stresses organization of resources; the planning and management function; organization of capital for machinery, buildings and land; and labor.

The section on organization of enterprise covers livestock yield and fixed costs; variable costs and optimum feed conversion; selection of feedstuffs; influences of season, crops, and cropping.

Suggests that enterprises be combined, e.g., crops and livestock; and that the enterprises be controlled through recording and analyzing data.

Beneke, Raymond R., and Winterboer, Ronald D. LINEAR PROGRAMMING APPLICATIONS TO AGRICULTURE. Ames: Iowa State University Press, 1973. vii, 244 p.

The authors stress more detailed input-output data than that required in budgeting. They describe procedures for constructing a model for simple crop production. Lists seven limitations of linear programming in farm planning.

Dent, John Berry, and Anderson, J.R., eds. SYSTEMS ANALYSIS IN AGRICULTURAL MANAGEMENT. New York: John Wiley & Sons, [1971]. 409 p. Illus., flowcharts.

Relates basic methods of systems analysis to agricultural management problems. Illustrates problems by different case studies: two series--crop and livestock systems, crop-irrigation systems. The authors offer this work as a base for further agricultural research.

Doane Agricultural Service. DOANE'S FARM MANAGEMENT GUIDE: A REFERENCE OF COMPLETE FARMING INFORMATION. [7th ed.] St. Louis, Mo.: [1966]. 336 p. Illus., maps.

A compendium of practical information for the farm manager.

Many maps illustrate, with telegraphic explanatory text, conditions and practices by geographic region in the United States.

There is a chapter on acquiring land--by ownership, rental or leasing--for full- or part-time use. "Doane's Lease Guide," pp. 25-26, explains types of leases, size of operation, sharing income and expenses.

Chapter on marketing includes federal and state marketing orders, pricing guidelines for livestock by type of stock.

Donaldson, Graham Francis, and Webster, J.P.G. AN OPERATING PROCEDURE FOR SIMULATION FARM PLANNING--MONTE CARLO METHOD. Ashford, [Kent, England]: Wye College, Department of Economics, 1968. v, 30 p. Illus.

Describes in detail simulation approach to farm planning, as a practical and useful complement to budgeting and linear programming techniques. Teaches, in an understandable style, the preparation of a flow chart, with examples of inputs.

FARM PLANNING; USING THE APPROPRIATE METHOD OF LINEAR PROGRAMMING. Extension Division Publication no. 297. Blacksburg: Virginia Polytechnic Institute Extension Division, 1969. 60 p. Illus., charts.

Linear programming in farm planning offers a method for selecting, from a combination of budgeted enterprises, that enterprise which will yield the highest returns on fixed resources.

Two sample problems are given which include all the steps leading to linear programming. Appendix provides example of budget forms for linear programming.

Hoskin, Michael. FARM PLANNING. Cassell Farm Books no. 9. Edited by Graham Boatfield. London: Cassell & Co., [1966]. 62 p. Tables, diags., reading list, glossary.



Farm planning is considered from the viewpoint of choosing enterprises: to be undertaken with the available land, labor, capital, and machinery; to be expanded; or to be reduced or eliminated.

Examples include: a small change, such as shifting more acreage to wheat production; a major change, such as replacing dairy farming with grassland cultivation; a new enterprise, such as the addition of pig farming to crops of cereals, sugar beets, and field peas.

Manitoba, University of. Faculty of the Agricultural College. **PRINCIPLES AND PRACTICES OF COMMERCIAL FARMING**. 2d ed. [Brandon]: [1968]. 620 p. Maps (color).

This work is designed to give the modern farm manager a source of information on the important aspects of planning his business.

Chapters on all aspects of farming and planning for each enterprise. The appendix includes a wealth of detail, typified by the following examples. Weights and measures tables include measure of hay in mow and weight of grain in bins or piles. Farm engineering calculations cover pulley size, speed and length of belt, livestock charts and measurements.

**MIDWEST FARM PLANNING MANUAL**. Edited by Sidney C. James. 3d ed. Ames: Iowa State University Press, [1973]. 333 p. Loose-leaf.

Covers Iowa conditions. Although written for college students, the book offers programming information and work sheets that may be of use to other farm planners. Explains the single entry account book.

O'Connor, Robert. **PRINCIPLES OF FARM BUSINESS ANALYSIS AND MANAGEMENT**. Shannon: Irish University Press, [1973]. 459 p. Chapter bibliographies.

Covers planning for the farm business; includes an outline of full-scale linear programming.

Mathematical appendix: pp. 390-435.

Simpson, Ian G. **PLANNING PROFITABLE FARMING SYSTEMS: FIVE EXAMPLES OF THE USE OF LINEAR PROGRAMMING**. [Leeds, England]: University of Leeds, Department of Agriculture, Economics Section, 1964. 66 p.

Not available for examination.

Upton, Martin, and Anthonio, Q.B.O. **FARMING AS A BUSINESS**. 2d ed. New York: Oxford University Press, 1965. 133 p. Glossary.

In the preface, the authors point out that reading alone will not make the farmer a better manager. However, he should become a better manager if he follows the book's advice on record keeping and planning.

The book emphasizes the importance of records as basic to planning. Records enable the manager to spot weaknesses in methods or in the farming system.

### FINANCIAL ACCOUNTS—USE IN FARM PLANNING

Botts, Ralph Rudolph. FARMERS' HANDBOOK OF FINANCIAL AND PHYSICAL MEASUREMENTS. Agricultural Handbook no. 230. [Washington, D.C.]: U.S. Department of Agriculture. Economic Research Division, [1964]. 56 p. Illus.

The 1966 revision was not available for examination.

Useful tables and general formulas for financial calculations and physical measurements are presented in question form for the reader to use in solving similar problems. Although the book is aimed at county agents and country bankers, the farm manager can use the physical measurements: estimated yields per acre in the field--corn; acreage by shape of field; volume (cubic contents) for corn, hay, water, and so on. Also provides estimates for quantities of building materials.

There is a section on planning life insurance. The section on financial considerations offers a general formula for short-term interest rates, as well as information on bank loans, small loans, and installment purchases.

Brake, J.R., ed. FARM AND PERSONAL FINANCE. Danville, Ill.: Interstate Printers & Publishers, [1968]. viii, 132 p. Illus., chapter biblios.

Background information on fundamental principles of finance.

Chapter 12: "Farm Insurance," pp. 105-12, by Myron P. Kelsey, discusses the special kinds of coverage needed on the farm.

Cobham, R.O., and Strong, William. THE FARMER AND THE LENDER--WHERE AND HOW TO BORROW CAPITAL. London: Imperial Chemical Industries, Agricultural Development Department, [1966]. 43 p. Illus., tables (some foldouts), reading list.

Suggests to farmers ways in which they can achieve closer relationship with lending institutions.

Presents a case study illustrating the type of financial information to be presented when a loan is sought.

FARM MONEY MANAGEMENT: A SUCCESSFUL FARMING BOOK. [Des Moines, Iowa: Meredith Corp., 1967.] 106 p.

This material was selected from money management articles that appeared in SUCCESSFUL FARMING. The articles cover land,

buildings, machines, investments, estate planning, income tax aids.

Finney, David John. AN INTRODUCTION TO STATISTICAL SCIENCE IN AGRICULTURE. 4th ed. New York: John Wiley & Sons, 1972. 290 p.

Intended for those who have not had a course in statistics. Emphasizes principles and intensive numerical practice routines. For consecutive reading and study. Not a reference book.

Hammonds, T.M. THE COMMODITY FUTURES MARKET FROM AN AGRICULTURAL PRODUCER'S POINT OF VIEW. New York: MSS Information Corp., [1972]. 90 p. Reading list.

Introduces the commodity futures market to the agricultural producer. Assumes no prior knowledge of this market. The information has been workshop-tested for needs of the producer.

Appendix: "Cost of Production; an Elusive Concept," pp. 68-76, by A. Gene Nelson, gives insight into the problems of determining production costs for a particular crop. Offers brief case examples.

Higgs, Roger, ed. AGRICULTURAL MATHEMATICS: PROBLEMS IN PRODUCTION, MANAGEMENT, MARKETING, MECHANIZATION, ENVIRONMENTAL QUALITY. Danville, Ill.: Interstate Printers & Publishers, [1973]. 311 p. Paperbound.

The importance of mathematics is pointed out in pages 11-12.

Unit 6: "Understanding Mathematics," pp. 259-99, explains the basic mathematics used in solving problems presented in the text.

Unit 4: pages 199-248, deal with problems of farm management and the marketing of farm products.

The last unit, pages 249-57, covers the agricultural environment--problems of animal wastes, fertilizers, and pesticides.

Hopkin, John A.; Barry, Peter J.; and Baker, C.B. FINANCIAL MANAGEMENT IN AGRICULTURE. Danville, Ill.: Interstate Printers & Publishers, [1973]. 459 p. Illus., chapter bibliis.

This book provides a detailed basis for understanding farm business and its financial investments. Table 1.1: "The Application of the Process of Management to the Organizational Areas of the Firm," pp. 5-6.

Four stages through which a farm business may pass are outlined. The internal and external financial information sources are described. Capital budgeting and budgeting for seasonal cash flow, long- and short-term loans are thoroughly covered. Agreements of all types are described and illustrated, as are government controls and regulations.

Chapter 15: "Alternatives in Business Organization," pp. 337-74, examines traditional forms for farm business, and reviews advantages and disadvantages. Table 15.2: "A Comparison of Selected Organizational Alternatives for the Agricultural Business Firm," [pp. 353-56], illustrates the text. Much of the discussion in this chapter focuses on the problems of coordinating production to meet the product specifications of the market.

Hopkins, John A., and Heady, Earl O. FARM RECORDS AND ACCOUNTING. 5th ed. Ames: Iowa State University Press, [1964]. 390 p.

Presents a system for practical use of accounts and records in farm management. Shows the importance of production and expense records in analysis and planning.

Chapter 19, pages 297-313, covers methods of farm management--the cash-rental farm and the stock-share lease; the professional farm management service. Types of accounts and records are described for each type of management.

Chapter 20: "The Farm Budget," pp. 317-40, includes budget forms for the crop plan and the livestock plan.

Chapter 21: "Linear Programming as a Planning Device," pp. 341-60.

James, Sydney C., and Stoneberg, Everett. FARM ACCOUNTING AND BUSINESS ANALYSIS. Ames: Iowa State University Press, [1974]. viii, 269 p. illus.

This book is a practical guide and reference for the farm manager. It requires no prior experience in bookkeeping or accounting, but does assume a knowledge of agricultural production.

The authors stress that well-kept records of production, inventory, and expenses are valuable for tax purposes. Such records can also be used to analyze individual farm enterprises, thereby uncovering possible problems.

Chapter 9: "Electronic Data Processing," pp. 149-86, explains the function of the computer in farm accounting and illustrates the records which must be provided to the EDP service.

Chapter 12: "Farm Family Living Accounts," pp. 249-56, illustrates and explains the importance of farm home records to the preparation of income tax returns.

Chapter 13: "The Farm Business Center," pp. 257-62, describes the establishment of a record-keeping center. Suggests such subject files as accounts and market reports, research studies by agricultural extension stations, manuals, and other reference materials.

Nelson, Aaron G[ene].; Lee, Warren F.; and Murray, William G. AGRICULTURAL FINANCE. 6th ed. Ames: Iowa State University Press, 1973. ix, 413 p. Tables, chapter bibliis.

Although aimed at the undergraduate, this text has useful references for the farm manager.

The chapters in part 2, "Financial Management in Farm Business," cover the acquisition of the capital for farming, interest rate terminology, repayment terms, legal aspects of borrowing, and so on.

Part 3 deals with financial markets and agricultural lending agencies.

Stone, John Alfred. ACCOUNTING FOR MANAGEMENT IN AGRICULTURE. Sydney, Australia: Angus & Robertson, [1968]. 188 p. Illus.

The author, a practicing accountant, prepared this book under a fellowship grant to help improve farm accounting practices and to provide background for farmers and advisors.

The first part covers farm management and accounting. The second deals with the content of farm accounts. Parts 3 and 4 present methods and organization of accounts, data processing, technical analysis and interpretation.

Part 5, chapter 21: "Budgets in Agriculture," pp. [146]-64. Forms and budget estimates are included in the appendix.

Sturrock, Ford Gibson. FARM ACCOUNTING AND MANAGEMENT. 5th ed. London: Pitman & Sons, [1967]. xi, 228 p. Tables, diags.

A discussion of the business of farming, its organizational structure and financing.

Chapter 20: "Starting to Farm," pp. 198-212, gives examples using information in earlier chapters.

Vermeer, James, and Starbird, I.R. FAMILY-FARM RECORDS. Farmers' Bulletin no. 2167. Rev. ed. Washington, D.C.: U.S. Department of Agriculture, 1973. 22 p. Illus.

Discusses five different kinds of business records for the family farm. Completed sample forms illustrate records of purchases, inventory, and production from farm enterprises.

## MARKETING AGRICULTURAL PRODUCTS

Kohls, Richard L., and Downey, W. David. MARKETING AGRICULTURAL PRODUCTS. 4th ed. New York: Macmillan, [1972]. 444 p. Illus., tables, chapter bibliis.

This textbook provides basic coverage on marketing farm products. The relationship of producer to consumer--processor, wholesaler, retailer--is described, with examples.

Chapter 17: "Collection and Use of Market Information," pp. 247-63, emphasizes careful use of statistics on price and movement of agricultural products.

Part of this book is devoted to marketing specific commodities--livestock, dairy, poultry, eggs, grain. Marketing channels and use of products are illustrated with charts from the Department of Agriculture.

Ladd, George W. AGRICULTURAL BARGAINING POWER. Ames: Iowa State University Press, [1964]. 163 p. Illus., tables.

This book is aimed at helping the farmer make sound decisions concerning agricultural bargaining.

Chapter 8: "The Role of Legislation," pp. 91-110, includes a discussion of marketing orders.

Moore, John R., and Walsh, Richard G. MARKET STRUCTURE OF THE AGRICULTURAL INDUSTRIES. Ames: Iowa State University Press, [1966]. 429 p. Illus., tables.

Fourteen industry chapters are summarized in a fifteenth chapter of cross-sectional analysis. Many industry chapters are cited in this volume in subject sections.

Mortenson, W.P. MODERN MARKETING OF FARM PRODUCTS. Danville, Ill.: Interstate Printers & Publishers, 1963. 277 p. Illus.

The second edition, 1968, was not available for examination.

This book looks at the types of business organizations involved in marketing farm products. Table: "Kinds of Farm Business Organizations," p. 416.

Describes cooperative marketing, marketing margins, agreements and orders, and price delivery.

Appendix A covers types of commodity share-leases.

Shepherd, Geoffrey S. AGRICULTURAL PRICE ANALYSIS. 5th ed. Ames: Iowa State University Press, [1963]. 332 p. Illus., tables (one foldout).

Use of price analysis in measuring demand and supply elasticity; sales, prices, and returns in relation to futures and direct payments.

Shepherd, Geoffrey S., and Futrell, Gene A. MARKETING FARM PRODUCTS --ECONOMIC ANALYSIS. 5th ed. Ames: Iowa State University Press, [1969]. 510 p. Illus. \*

Stresses the market of farm products as an ever-changing, constantly evolving structure. Maintains that the farmer must begin by



thinking of the potential consumer, then of his production. The prices and costs from farm to consumer are major problems.

Chapter 20: "Reducing Marketing Costs by Cooperation," pp. 260-74, shows that the coordination of production and marketing can change the cost factor.

Seven chapters on specific commodity marketing problems, including one on prices and costs of storage, are included in this basic textbook.

Tomek, William G., and Robinson, Kenneth L. AGRICULTURAL PRODUCT PRICES. Ithaca, N.Y.: Cornell University Press, [1972]. xi, 376 p. Chapter bibliis.

This textbook examines agricultural prices in terms of their behavior, differences and variability. Presents and explains five mechanisms for estimating farm prices. Describes the pricing institutions--commodity futures markets, governmental intervention--in pricing farm products.

Woodside, Arch G. "Competition and Changing Patterns in the Marketing of Agricultural Products: A Systems Approach." MARQUETTE BUSINESS REVIEW 18 (Fall 1974): 99-107.

The problem of competing effectively in the markets for agricultural products requires full understanding of the system as a whole. The author approaches the system by analyzing the activities of interacting institutions in moving farm products through the various marketing channels to the satisfied consumer. Chart: "The Agricultural Marketing System," p. 101, illustrates the analysis.

Three basic problems in marketing agricultural products are discussed--meeting consumer demand, understanding the price system, and moving products to the consumer in the form demanded, at the time and place desired.

"The Dynamics of Agricultural Marketing," pp. 103-4, lists nineteen factors which are foreseeable changes between 1974 and 1980.

### AGRICULTURAL COOPERATIVE ORGANIZATIONS

Knapp, Joseph Grant. FARMERS IN BUSINESS; STUDIES IN COOPERATIVE ENTERPRISE. Washington, D.C.: American Enterprise Institute for Public Policy Research, [1963]. 462 p.

Presents a comprehensive view of the American cooperative institution, what it is and what it is not. The establishment and operation of such an organization is illustrated with a description of growth processes of five major farm cooperatives. Looks at new and future developments.

Appendix A: "For Further Reading," pp. 433-34. Appendix B gives sources for current farmer cooperative statistics.

(This author's book, THE ADVANCE OF AMERICAN COOPERATIVE ENTERPRISE, Danville, Ill.: Interstate Printers & Publishers, 1973, was not available for examination.)

McGrath, Mary Jean, ed. GUIDELINES FOR COOPERATIVES; A BOOK OF READINGS. Preface by Jerry Voorhis. Madison: University of Wisconsin, Agricultural Extension International Cooperative Training Center, 1969. 207 p. Illus.

Papers were contributed especially for this volume.

Olsen, H.M. "Some Principles and Practices of Farmer Cooperatives." Danville, Ill.: Interstate Printers & Publishers, 1961. 118 p. Mimeographed.

A manual prepared for vocational education, but useful for anyone who wishes a condensed reference on cooperatives.

Roy, Ewell Paul. COLLECTIVE BARGAINING IN AGRICULTURE. Danville, Ill.: Interstate Printers & Publishers, 1970. 282 p. Illus., chapter biblios., selected reading list.

This textbook has reference use for farm managers.

Covers the economic and legal foundations for farmer collective bargaining, general and specific areas, farmer organizations and negotiations with unions.

Appendix A: "Membership and Marketing Agreement (Form)," pp. 226-29.

\_\_\_\_\_. COOPERATIVES: TODAY AND TOMORROW. 2d ed. Danville, Ill.: Interstate Printers & Publishers, 1969. 612 p. Illus.

This textbook covers all types of cooperatives, farm and nonfarm, with emphasis on basic principles of this type of institution.

Chapter 7: "Agricultural and Consumer Cooperatives in the USA," pp. 125-66.

Chapters 16-23 discuss management of cooperatives, income, taxation, and projections for the future.

Schaars, Marvin A. COOPERATIVES: PRINCIPLES AND PRACTICES. Madison: University of Wisconsin, Agricultural Cooperative Extension Programs, 1973. 99 p. Illus.

The kinds of cooperatives, legal basis, management, and financial aspects are covered with emphasis on marketing farm products.

Compares the historical developments of cooperatives in England, Germany, and Denmark. Also covers the history and benefits of cooperatives in this country.

Figure 7: "Channels of Cooperative Information," p. 47, is in a section on the importance of keeping members of the cooperative and the public informed.

Thompson, Jack C. POLICY FORMULATION FOR AGRICULTURAL COOPERATIVES AT THE BOARD OF DIRECTOR LEVEL. Research Report no. 160. Athens: University of Georgia, Agricultural Experiment Stations, [1973]. 81 p.

This study was undertaken to develop a guide for board-of-director-level administration in forming company policies in agricultural cooperatives.

The report includes suggestions for identifying problems, choosing alternatives, financing, accounting, public relations, and member relations.

### HIRED FARM LABOR

Bishop, Charles E., ed. FARM LABOR IN THE UNITED STATES. New York: Columbia University Press, [1967]. vi, 143 p. Illus., tables.

Background for discussion of farm manpower problems and policies reflected in discussions during a conference on farm manpower held in Washington, D.C., 28-29 October 1965, sponsored by Office of Manpower Policy, Evaluation, and Research.

Coverage includes dimensions of the farm labor problem, adjustments to changing technology, earning skills and occupational mobility of the hired farm worker. Manpower development programs and a farm manpower policy were examined.

"Farm Labor Situation Getting Worse." THE PAPER (January 1975): 4.

Report of a research project being conducted by Dr. John W. Nixon, assistant professor of Agricultural Economics, University of Georgia College of Agriculture, Athens.

The project has two major goals: translating underemployment to an unemployment equivalent and assuring adequate labor supply during planting, cultivating, and harvesting seasons.

Nelkin, Dorothy. ON THE SEASON: ASPECTS OF THE MIGRANT LABOR SYSTEM. ILR Paperback no. 8. Ithaca: New York State School of Industrial and Labor Relations, 1970. 85 p.

The report begins with a profile of migrant labor as "invisible men outside the mainstream of society," and the problems of these workers.

Describes employment practices and the need for trained workers as agriculture becomes more mechanized.

Summarizes findings and draws some conclusions for management.

Padfield, Harland, and Martin, William E. FARMERS, WORKERS AND MACHINERY; TECHNOLOGICAL AND SOCIAL CHANGE IN FARM INDUSTRIES. Tucson: University of Arizona Press, 1965. 340 p. Illus., tables.

This book is built around a study in Arizona among farm worker families as people. Reviews the changing technology in agricultural production and its consequences. The research findings bring to light some basic labor-management problems.

### FARM MACHINERY AND EQUIPMENT

Barger, E.L. TRACTORS AND THEIR POWER UNITS. 2d ed. New York: John Wiley & Sons, [1963]. 541 p. Illus., tables, chapter biblios.

Useful as a reference book, although aimed at the professional agricultural engineering student.

This edition adds a chapter on diesel engines, and new material on sources of energy and energy conversion. There is detailed coverage of the internal combustion engine.

Cox, Sidney W.R., and Filby, D.E. INSTRUMENTATION IN AGRICULTURE. London: Crosby Lockwood Staples, [1972]. 172 p. Illus.

Deals with generally known measurements used in agriculture but includes an introduction and appraisal of techniques only beginning to affect agriculture.

Examples on the use of instrumentation to increase farm efficiency include: control of livestock and dairy feeding installations, automatic guidance of tractors and harvesters by remote sensing.

Chapter 4: "Moisture in Crops," pp. 60-73, describes portable grain moisture meter, and field-use heating methods.

Culpin, Claude. FARM MACHINERY. 8th ed. London: Crosby Lockwood Staples, [1969]. 788 p. Illus., tables, glossary.

The increased importance of fodder conservation and livestock engineering are emphasized in this book. Separate chapters are on silage making and feeding, and on equipment for livestock husbandry. Other new chapters in this edition: "Environment Control in Crop and Stock Buildings;" "Machinery for Land Drainage and Estate Maintenance;" "Development and Economic Aspects of the Mechanization of Agriculture."

\_\_\_\_\_. PROFITABLE FARM MECHANIZATION. 2d ed. London: Crosby Lockwood Staples, 1968. 343 p. Illus., tables.

This book deals with mechanization costs and efficiency. Standards in relation to problems of the individual farmer and size of farm are discussed.

The chapter on "Work Study and Mechanization" refers to a systematic approach to farm work known in the United States as "work simplification." Presents case examples.

Hall, Carl W. PROCESSING EQUIPMENT FOR AGRICULTURAL PRODUCTS. Ann Arbor, Mich.: J.W. Edwards Publishing Co., 1963. 272 p. Illus., tables, chapter biblios.

Use and care of equipment in agriculture processing are described in detail.

Processing equipment information covers feed grinding and mixing; milk handling and processing; seed cleaning; fruit and vegetable washing, grading, sizing; mechanical drying and storing systems for hay and grain crops.

Useful measurements in appendixes; grain drying recommendations by the Crop Dryer Manufacturers Association; time and fuel requirements for drying hay with heated air.

Jones, F.R. FARM GAS ENGINES AND TRACTORS. 4th ed. New York: McGraw-Hill Book Co., [1966]. viii, 518 p. Illus.

Surveys farm power. Chapters on tractors and tractor parts, engines, diesels, fuels, lubricants, batteries.

Chapter 28: "Economics of Tractor Utilization," pp. 455-67.

Appendix reproduces the ASAE-SAE standards for the various types of equipment.

Kepner, R.A.; Baines, Roy; and Barger, E.L. PRINCIPLES OF FARM MACHINERY. 2d ed. Westport, Conn.: AVI Publishing Co., 1972. xi, 486 p. Illus., chapter biblios.

The first chapter, pages 1-21, reviews research and developments in farm machinery.

Chapters describe and illustrate farm implements for tilling and fertilizing field and row crops, and for applying pesticides. Much of the book is devoted to mechanical harvesters developed for such field crops as peanuts, sugar beets, onions, potatoes. Also describes implements designed for specific fruit and vegetable crops, such as the mechanical shaker or "shake-catch" harvester used to collect tree fruit.

POWER TO PRODUCE; THE YEARBOOK OF AGRICULTURE, 1960. Washington, D.C.: U.S. Department of Agriculture, 1960. viii, 480 p. Illus.

"Pictures a wide screen view focus on the technological revolution that is now changing agriculture and our way of life."

"Management of Machinery," pp. 346-54, by Kenneth K. Barnes and Paul E. Strickler.

Promersberger, W.J., and Bishop, F.E. MODERN FARM POWER. 2d ed. Englewood Cliffs, N.J.: Prentice-Hall, 1971. 280 p. Illus.

Designed to help owners and operators obtain the power and service built into their farm machinery.

After a brief history of engines, the authors provide thorough and instructive coverage of power equipment; details on parts, with a section on selecting and managing tractors and machines; cost of ownership.

Richey, C.B.; Jacobson, P.; and Hall, C[arl].W., eds. AGRICULTURE ENGINEERS' HANDBOOK. New York: McGraw-Hill Book Co., 1961. 892 p. Illus., charts, tables, maps, chapter biblios.

Assumes some knowledge of agricultural production and equipment. Sections include farmstead structures and equipment, with basic data on solutions of farm problems, such as heat and moisture production by livestock.

The subject of agricultural drainage is discussed on pages 356-400 by John G. Sutton. Wayne D. Criddle writes on "Irrigation," pp. 509-31.

Smith, H.P. FARM MACHINERY AND EQUIPMENT. 5th ed. New York: McGraw-Hill Book Co., [1964]. vii, 519 p. Illus.

The book begins with a chapter on "Farm Machinery in Relation to Agriculture," pp. 1-6, followed by chapters on all types of machinery.

Chapter 25: "Selection of Farm Equipment," pp. 459-64.

Chapter 26: "Economics and Management of Farm Equipment," pp. 456-82.

Table 7 in the appendix reprints a list of historical dates in the development of farm machinery in the United States by type (purpose), date, year, and description for the period 1788 through 1958.

Stone, Archie-A., and Gulvin, Harold E. MACHINES FOR POWER FARMING. 2d ed. New York: John Wiley & Sons, [1967]. vii, 559 p. Illus., diags., tables.



Aimed at providing assistance in selection, use, and maintenance of typical machines. Parts of the book concentrate on power for production, primary tillage, fertilizer application, planting, seedling, herbicide and insecticide application, harvesting.

Part 8 is devoted to management of business--selecting, financing, operating, and maintaining machinery and equipment.

Waters, William K., and Daum, Donald R. FARM MACHINERY MANAGEMENT GUIDE. Special Circular no. 192. University Park: Pennsylvania State University, Cooperative Extension Service, 1974. 56 p.

The guide describes machinery management and its importance. Recommends ways to manage machine problems and offers methods for collecting data to aid selection and trading of machinery.

Discusses finance, purchase, and cost analysis of farm machines. Includes machinery cost analysis worksheets and pages for the manager's own calculations.

### FARM BUILDINGS

Boyd, J.S. PRACTICAL FARM BUILDINGS; A TEXT AND HANDBOOK. Original drawings by Virginia T. Boyd. Danville, Ill.: Interstate Printers & Publishers, [1973]. 278 p. Illus., tables.

This reference handbook provides a wealth of advice for on-the-job farm building construction by nonengineers. Gives terms used in design, advice on selection of wood; methods for computing loads on structures, and so forth. Guidance is given on reading plans and estimating costs.

Appendix B: "Environment Information," pp. 201-13, lists required space per animal by age, for poultry, swine, and beef cattle.

Appendix E: "Space for Manure Storage," pp. 229-37.

Appendix G: "Grain and Silage Storage," pp. 243-51, building space information.

Great Britain. Ministry of Agriculture, Fisheries, and Food. FARM BUILDINGS POCKETBOOK; SOME USEFUL ADVICE GIVING STANDARDS, DIMENSIONS, AND DATA FOR THOSE INTERESTED IN THE DESIGN OF FARM BUILDINGS. London: H.M. Stationery Office, 1967. 91 p. Illus., tables, reading list.

Format of book makes it an easy-to-use reference. Brief, but full coverage of dairy buildings, with designs and plans; shelter for beef cattle; lowland and upland sheep, and lambing pens; pens for pigs and sows, including pens for farrowing, rearing, etc. Poultry buildings include breeding and incubator house; brooding, rearing, and egg laying shelters, with provisions for

table poultry. There are sections on grain storage, fodder, silage, implements, fuel, and workshops.

Lytle, R.J. FARM BUILDERS HANDBOOK; WITH ADDED MATERIAL FOR POLE-TYPE INDUSTRIAL BUILDINGS. 2d ed., rev. Farmington, Mich.: Structures Publishing Co., 1973. 206 p. Illus., maps.

For the contractor who specializes in farm buildings, but of value to the farm manager who contracts for the buildings.

Section on "How to Use the Handbook" and "Suggested Farm Builders' Library." Merle L. Esmay wrote the sections entitled "Special Purpose Buildings" and "Controlling Environmental Housing."

In Chapter 9: "Livestock Waste Management," pp. 125-46, Arthur J. Muehling describes aerobic treatment of animal waste, lagoons, tanks, digesters, slotted floors, and storage tanks.

Appendix C: "OSHA and the Farm Builder," pp. 247-52.

Neubauer, Loren W., and Walker, Harry B. FARM BUILDING DESIGN. Englewood Cliffs, N.J.: Prentice-Hall, 1961. 623 p. Illus., tables, diags., chapter biblios.

The introductory chapters review the types of farm buildings. They also provide information on common construction materials in terms of their usefulness in farm building, the loads that they place on supporting structures, and their costs.

Individual chapters describe dairy barns; barns for beef cattle, hogs, sheep; poultry houses; grain bins and corn cribs; sheds for hay, feed, and machinery.

Phipps, Lloyd J. MECHANICS IN AGRICULTURE. Danville, Ill.: Interstate Printers & Publishers, [1967]. 808 p. Illus., tables.

Designed to serve the needs of adults who are acquiring knowledge and skills in agricultural mechanics, as well as students.

Emphasis is on the general principles of agricultural mechanics from shop work to soil and water management.

Chapter 2: "Using Safety Precautions," pp. 14-39, illustrates the "how-to and why" text.

Part 2 covers the development of the farm shop, discusses the use of hand power tools; describes woodworking, painting, and glazing operations.

Part 3 is about power machinery and part 4 discusses building construction and repair, concrete work, fencing construction and maintenance.

Sayce, R.B. FARM BUILDINGS; A STUDY OF THE LONG-TERM EQUIPMENT OF THE FARM, INCLUDING LAYOUT, DESIGN AND SERVICES, FINANCIAL APPRAISAL AND CONTROL. London: Estates Gazette, [1967]. 533 p. Illus., charts (foldout), reading list.

For all who are concerned with farm improvement from the viewpoint that "farm buildings are an integral part of the farm that they serve."

The first three chapters cover layout of the buildings and their relationship to the farm; framed and prefabricated buildings; special purpose buildings; siting, design, and construction of storage buildings; and the farm workshop.

Chapter 5: "The Control of Environment," pp. 109-31, precedes chapters on livestock buildings; includes a glossary of terms; presents tables demonstrating the values of different kinds of building materials.

The book includes information on constructing farm roads, fences, gates, cattle grids, farmhouses, and cottages.

The reading list is keyed to each part of the sixteen chapters.

Wakeman, T.J., and McCoy, Vernon Lee. THE FARM SHOP. New York: Macmillan, 1960. 597 p. Illus.

Guide for both the beginner and the veteran on establishing and equipping the farm workshop. The text is illustrated with line drawings and over four hundred photographs.

The book describes seventy farm shop projects with step-by-step pictures. Metalwork (hot and cold), soldering and sheetmetal handling, woodworking, painting, glazing, masonry, and rope work are among the shop activities described.

## Chapter 2

### THE COMMUNICATORS

#### INTRODUCTORY COMMENT

This section is about the farm manager's need for current agricultural information and the means by which he receives it.

Liberty Hyde Bailey, the great American horticulturist, included a chapter, "The Reading Habit," pp. 37-45, in his little book, *THE TRAINING OF FARMERS* (New York: The Century Co., 1909).

He says, "What a farmer reads has great influence on his training . . . The countryman needs to read for courage that he may overcome his fatalism and inertia . . . I would not eliminate the natural desire of anybody to read for entertainment . . . but I would make a special effort to develop in the countryman a habit of reading such things as will give him personal mastery over his conditions. . . .

"The agricultural press is now very extensive and is contributing to the development of the reading habit. At the same time it spreads information and puts the reader in touch with current topics."

#### INFORMATION AND CHANGE

Evans, Everett F., and Donahue, R.L. *EXPLORING AGRICULTURE*. Englewood Cliffs, N.J.: Prentice-Hall, 1964. 471 p. Illus., maps.

Drawing: "How Midwest Farmers Obtained Information on a New Hybrid Corn," p. 131.

Fraser, Allan K., and Legg, Gordon W. *WORK STUDY IN AGRICULTURE*. London: Land Books, 1962. 247 p. Illus., foldouts.

The authors present approaches, based on experience in use of

work study methods, to individual farm problems. Although an aid and not a panacea, this program has value, according to the authors, in the collection of planning information.

In the United States, this study method has been known as "Work Simplification" since 1942 when the National Farm Institute met at Purdue University.

Leagans, J. Paul, and Loomis, Charles P., eds. BEHAVIORAL CHANGE IN AGRICULTURE; CONCEPTS AND STRATEGIES FOR INFLUENCING CHANGE. Ithaca, N.Y.: Cornell University Press, [1971]. 519 p. Illus., reading list.

Papers contributed by eight specialists in different disciplines focus on variable human behavior in the complex process of social change, acceptance of new ways, and the agents of change.

An overview of these papers by John B. Hall appears on pages 465-84.

Chapter 5: "Extension Education and Modernization," pages 104-47, by J. Paul Leagans, deals with extension work as a program of adult education and its strategy as an agent of agricultural change.

Chapter 9: "Social Psychology," pages 331-65, by Harry C. Triandis, has a section, "Innovative Process," p. 353. The author credits the farm press in the United States with promoting new ideas and assisting their adoption.

Brief biographical sketches of contributors, pages 485-88; respondents, page 489.

Lionberger, H.F. ADOPTION OF NEW IDEAS AND PRACTICES: A SUMMARY OF THE RESEARCH DEALING WITH THE ACCEPTANCE OF TECHNOLOGICAL CHANGE IN AGRICULTURE WITH IMPLICATIONS FOR ACTION IN FACILITATING SUCH CHANGE. Ames: Iowa State University Press, [1960]. 164 p. Illus., reading lists.

This book, developed for the American Association of Land-Grant Colleges and State Universities by the National Project in Agricultural Communications, reviews studies which deal with communication and the adoption of ideas and practices.

Chapters 2-9 explore ways that changes in farm practices take place.

Chapter 4: "Information Sources and Media as Change Agents," pp. 42-51, includes a table: "Major Functions and Structural Features of Four Types of Communicating Agents for Farm Information and Expected Roles of These Types in the Acceptance of Change in Farming," p. 44.

Part 3 is devoted to bibliographies of research sources, related studies, and general references.

McMillen, Wheeler. LAND OF PLENTY: THE AMERICAN FARM STORY. New York: Holt, Rinehart & Winston, [1961]. 138 p. Illus.

The author is a past president of the Philadelphia Society for the Promotion of Agriculture.

Chapter 12: "Education Reaches Out," pp. 95-103, maintains that information is the most essential agricultural tool.

Welch, Finis. "Formal Education and the Distributional Effects of Agricultural Research and Extension." In *RESOURCE ALLOCATION IN AGRICULTURAL RESEARCH*, edited by Walter L. Fishel, pp. 183-92. Minneapolis: University of Minnesota Press, [1971].

Distinguishes between technical change per se and the rate of change. In the time lapse between technological introduction, there is need to continuously evaluate and to respond according to ability.

## EDUCATION IN AGRICULTURE

Bender, Ralph E. *ADULT EDUCATION IN AGRICULTURE*. Columbus, Ohio: Charles E. Merrill Publishing Co., [1972]. 225 p. Illus., chapter biblios.

Chapter 8: "Mass Media in Adult Education," pp. 139-63.

This book is written for teachers of adults, including agricultural extension agents.

Brown, Mary Ruth; Lair, Eugenie; and Bright, Karin Drudge, comps. *AGRICULTURAL EDUCATION IN A TECHNICAL SOCIETY*. Chicago: American Library Association Publishing Services, 1973. 300 p. Author, title, and subject indexes, publisher's directory.

This is an annotated bibliography of resources compiled to assist educators in secondary and post-secondary agricultural education programs.

Materials in the English language "believed to be in print up to January 1, 1971, although a few books published outside the United States are covered." Local and state publications are omitted except when valuable as a subject resource. One example each of periodicals from state government agencies, private state publishers, and agricultural experiment stations is included.

Resources covered include books, periodicals, guides to societies, audiovisual aids, government documents.

Hoover, Norman K. *HANDBOOK OF AGRICULTURAL OCCUPATIONS: PREPARATION FOR TECHNICAL AND PROFESSIONAL WORK IN AGRICULTURE*. 2d ed. Danville, Ill.: Interstate Printers & Publishers, [1969]. 397 p. Illus.

For the high school student interested in exploring opportunities for careers in agriculture.



Appendix A: "A Directory of Institutions Offering Instruction in Agriculture at the College Level," p. 231. Lists colleges by states; includes correspondence courses, winter courses, and two-year certificate programs.

"Land-Grant College: 1862-1900; 1900 to Present: Period of Expansion." In *AMERICAN UNIVERSITIES AND COLLEGES*, 10th ed., edited by Otis A. Single-  
tary, pp. 4-5. Washington, D.C.: American Council on Education, [1968].

This brief essay reviews the history of the land-grant college system.

Sidney, Howard, ed. *AGRICULTURAL, FORESTRY, AND OCEANOGRAPHIC TECHNICIAN*. Chicago: J.G. Ferguson Publishing Co., [1969]. 334 p. Illus.

"The Agricultural Business Technician," pp. 250-60, describes this career in terms of the type of work, the necessary personal qualifications, and the post-high school education needed to pursue this career. Outlines a typical first- and second-year course. Advises on entry level positions, license or certification requirements, working conditions, earnings, and benefits for the future.

Schools offering agricultural, forestry, and oceanographic programs are listed on pages 315-32.

Stevens, Glenn Z. *AGRICULTURAL EDUCATION*. New York: Center for Applied Research in Education, 1967. xi, 113 p.

An assessment of educational programs in agriculture. Four chapters are devoted to the post-high school vocational curriculums and courses. Other chapters are on continuing education for adults, instructional resources, and evaluation of teacher education.

Storey, David D. "Graduate Programs in Agricultural Economics." *AMERICAN JOURNAL OF AGRICULTURAL ECONOMICS* 55 (February 1973): 6104.

Reports results of a mail survey of members of agricultural economics departments in American and Canadian colleges. Purpose of the study was to identify new approaches to graduate education, requirements and procedures.

### AGRICULTURAL RESEARCH AND EXTENSION SERVICES AVAILABLE TO THE FARM MANAGER

AFTER A HUNDRED YEARS, THE *YEARBOOK OF AGRICULTURE* 1962. Washington, D.C.: U.S. Department of Agriculture, 1962. 701 p. Illus., maps.

A record of agricultural accomplishments in the United States and in particular the work of the Department of Agriculture, established in 1862.

"The Peoples Colleges," pages 13-20, gives background on Sen. Justin Smith Morrill and his bill for the establishment of land-grant colleges.

Also included is a section entitled "Significant Books About Agriculture, 1860-1960, Selected for Their Influence on the Agriculture of Their Day, Importance of the Authors, or Their Lasting Qualities," pages 646-51, compiled by Elizabeth Gould Davis, bibliographer, National Agricultural Library. Federal and state publications are not included.

Axinn, George Harold, and Thorat, Sudhakar. MODERNIZING WORLD AGRICULTURE; A COMPARATIVE STUDY OF AGRICULTURAL EXTENSION EDUCATION SYSTEM. New York: Praeger Publishers, 1972. 231 p. Illus., reading list.

Explores extension education in the rural social systems of the world: India, United Kingdom, Japan, Israel, Denmark, Taiwan, United States, Brazil, United Arab Republic, Australia, Pakistan, Nigeria.

Chapter 14: "The Systems Compared," pp. 168-84.

Bay, Edwin. HISTORY OF THE NATIONAL ASSOCIATION OF AGRICULTURAL AGENTS. 1915-1960. Springfield, Mo.: National Association of Agricultural Agents, 1961. 184 p. Illus.

Brief biographical sketches of the pioneers in the system. Organization of the association; its early years. Year-by-year accounts of association activities.

Blanch, Lloyd E. FEDERAL COOPERATION IN AGRICULTURAL EXTENSION WORK, VOCATIONAL EDUCATION AND VOCATIONAL REHABILITATION. Washington, D.C.: U.S. Department of the Interior, Office of Education, 1933. Reprint. New York: Arno Press, 1969. 297 p. Tables, reading list.

Chapter 7, pages 101-8, discusses the Smith-Lever Act and its enactment. Appendix I carries the text of the act.

Chapter 8, pages 109-31, features the Smith-Hughes Act to promote vocational education in agriculture. Appendix II carries the text of that act.

Part 4 describes the organization and operation of the Cooperative Extension System, pages 189-208.

CENTURY OF SERVICE, THE FIRST 100 YEARS OF THE UNITED STATES DEPARTMENT OF AGRICULTURE. Washington, D.C.: U.S. Department of Agriculture, 1963. 575 p. Illus., ports.

From the beginning years through the World War I transition period, 1925-33; the agricultural adjustment/soil protection years, 1935-40. The new rural welfare program, 1933-40. Administration of the

department 1943-45 and 1945-48. The technological changes 1953-60, toward a new century.

Biographies of commissioners, secretaries, and others in the department, 1862-1961; organization of the agencies of the USDA; chronology of major events related to the work of the department.

Knoblauch, H.C. STATE AGRICULTURAL EXPERIMENT STATIONS; A HISTORY OF RESEARCH POLICY AND PROCEDURE. Miscellaneous Publication no. 904. Washington, D.C.: U.S. Department of Agriculture, May 1962. 262 p. Illus., maps.

The appendix has full text of the acts of Congress which provided for the establishment of the land-grant colleges and state universities in 1862, the agricultural experiment stations in 1887, and the strengthening of those programs by subsequent acts.

LeClerg, Erwin L.; Leonard, Warren H.; and Clark, Andrew G. FIELD PLOT TECHNIQUE. 2d ed. Minneapolis: Burgess Publishing Co., [1962]. 373 p. Illus., chapter biblios.

Attempts to bring together and explain the general principles, techniques, and procedures applicable to experimentation in agriculture and biology.

In the introduction, the authors provide a brief history of field experiments, including studies in the United States.

Morgan, Robert J. GOVERNING SOIL CONSERVATION: THIRTY YEARS OF THE NEW DECENTRALIZATION. [Baltimore, Md.]: Johns Hopkins University Press, [1965]. 403 p. Tables.

This story of the establishment and organization of Soil Conservation Services was published for Resources for the Future. Clarifies the federal-state district relations, and state-district relations.

"Citations from State Codes for Soil Conservation District Laws," pp. 375-76.

National Research Council. Committee on Remote Sensing in Agriculture and Forestry. REMOTE SENSING; WITH SPECIAL REFERENCE TO RESEARCH IN AGRICULTURE AND FORESTRY. Washington, D.C.: National Academy of Science, 1970. 467 p. Illus.

Reports on uses of remote sensing for research in management of agriculture and forestry. Specific uses include land-use inventories; soil surveys; crop condition estimates and yield forecasting; acreage distribution of crops; disaster location and mapping; detection of crop insect pests and diseases; water supply information; irrigation management; weather forecasting; rangeland management, livestock surveys.

Sanders, H.C., ed. THE COOPERATIVE EXTENSION SERVICE. Englewood Cliffs, N.J.: Prentice-Hall, [1966]. 448 p. Chapter biblios.

Part 1 introduces the cooperative extension service, its legal base, scope, function, and objective.

Appendix: "Selected General Objectives," pp. 417-23.

"Smith-Lever Act, as Amended in 1962," pp. 426-28, authorizes cooperative extension between the land-grant colleges and the Department of Agriculture.

Scott, R.V. THE RELUCTANT FARMER; THE RISE OF AGRICULTURAL EXTENSION TO 1914. Urbana: University of Illinois Press, [1970]. xi, 362 p. Reading list.

"This monograph is the story of the search for a teaching device effective with rural adults. . . ."

Chapter 10: "The County Agent Comes to the North," pp. 254-87.

Simms, D. Harper. THE SOIL CONSERVATION SERVICE. New York: Praeger Publishers, [1970]. ix, 238 p. Illus.

The organizational structure of the Soil Conservation Service (SCS) is illustrated on the chart opposite page 3. Describes the work of the service and the dimensions of the job it has helped to accomplish.

Several chapters cover the conflict among governmental agencies when the SCS was being established.

Appendix 1: "Careers in Soil Conservation Service," pp. 211-16.

Appendix 2: "Directory of Principal SCS Offices," p. 217.

Williams, Donald B. AGRICULTURAL EXTENSION; FARM EXTENSION SERVICE IN AUSTRALIA, BRITAIN AND UNITED STATES. Victoria, Australia: Melbourne University Press; London: Cambridge University Press, [1968]. xi, 218 p. Chapter biblios.

Presents an analysis of agricultural extension services in the social and administrative environment of agriculture. Stresses the relation to agricultural education as well as to agricultural science.

Chapters 4 and 5, pages 21-65, cover extension service in the United States. Other chapters cover the service in Britain and Australia.

Chapter 10: "Extension in Farm Management and Agricultural Policy," pp. 157-78.

### THE FARM PRESS

Demaree, Albert Lowther. THE AMERICAN AGRICULTURAL PRESS, 1819-1860. New York: Columbia University Press, 1941. Reprint. New York: Porcupine Press, 1974. 449 p. Ports., reading list.

The purpose of this study was to describe the general content and editorial objectives of agricultural journals. One hundred agricultural periodicals were examined; sixteen were chosen for special study.

There is a chapter on farm editors and farm advertising.

Chapter 9: "The Agricultural Fair," pp. 173-236.

Portraits of editors are included in the index section.

Evans, James F. PRAIRIE FARMER AND WLS: THE BURRIDGE D. BUTLER YEARS. Urbana: University of Illinois Press, 1969. 327 p. Illus., reading list.

The coverage of "Prairie Farmer and the Farm Press," pp. 62-72, contains information about all farm publications of the period.

Chapter 7: "Early Radio and the Illinois Farmer," pp. 153-75, reviews the story of Chicago market livestock and grain reports, and farm ownership of radios.

Chapter 8: "WLS: The Prairie Farmer Station," pp. 176-205, gives the origin of the station's call letters.

Evans, James F., and Salcedo, Rodolfo N. COMMUNICATION IN AGRICULTURE; THE AMERICAN FARM PRESS. Replica Edition no. 4. Ames: Iowa State University Press, 1974. 276 p. Illus., tables, charts, reading list.

The authors use time-series data to trace various changes among 2,641 commercial farm publications from 1880-1970. The year 1880 was chosen because that year the number of nonfarm workers exceeded that of farm workers.

This study follows the growth of the farm press and its place in helping move information to and from farmers.

Notes for chapters: Pages 219-39.

"International Congress of Farm Writers (First): Proceedings." Edited by J.S. Cram. Quebec: Macdonald College, 18-21 June 1967. 110 p. Illus. Spiral-bound.

Four papers were read during a panel on "Farm Communications Around the World."

George M. Beal and Joe M. Bohlen reported research on "How People Find Out About Farming." Their papers discuss the adop-

tive process, sources of information, rate of adoption, credulity gap.

Transcript of the question-and-answer period following the papers brings out information on the percentage of farmers distributed according to their acceptance of innovation.

Johnson, Glenn L.; Halter, Albert N.; Jensen, Harold R.; and Thomas, D. Woods. A STUDY OF MANAGERIAL PROCESSES OF MIDWESTERN FARMERS. Ames: Iowa State University Press, [1961]. 233 p. Illus., tables.

This study is about the types and sources of information used by 315 farmers surveyed by personal interview.

Table 9, page 30, shows the noncommunicative sources. Table 11, page 31, shows communicative sources for five major types and subcategories of information.

Chapter 4: "Analytical Processes in Farm Management," pp. 55-84, summarizes and interprets findings related to decision making.

Appendix includes the questionnaire and instructions for interviewers.

Murphy, Donald R. WHAT FARMERS READ AND LIKE; A RECORD OF EXPERIMENTS IN READERSHIP IN WALLACE'S FARMER AND WISCONSIN AGRICULTURE, 1938-61. Ames: Iowa State University Press, 1962. 250 p. Illus., reading list.

Summarizes experiences in farm readership research and experiments in Iowa and Wisconsin.

Quebral, Nora. "Farm Journal and American Agriculture, 1877-1965." Ph.D dissertation, University of Illinois, 1966. Reading list.

The study explores the secret of the longevity of FARM JOURNAL, which was founded in 1877 by William Atkinson.

This project was supported by a Rockefeller Foundation scholarship in communication. The author had access to records in the FARM JOURNAL offices in Philadelphia.





## Chapter 3

### INFLUENCING FACTORS

#### FARMER ORGANIZATIONS

Berger, Samuel R. DOLLAR HARVEST, THE STORY OF THE FARM BUREAU. Lexington, Mass.: D.C. Heath & Co., [1971]. xi, 221 p.

The foreword by Cesar Chavez declares that the Farm Bureau is the principal opponent of unionization of farm workers.

The author, with former Congressman Joe Resnick, initiated a three-year investigation of the Farm Bureau in 1967. This book reports that investigation.

Buck, Solon Justus. THE GRANGER MOVEMENT; A STUDY OF AGRICULTURAL ORGANIZATION AND ITS POLITICAL, ECONOMIC, AND SOCIAL MANIFESTATIONS. Cambridge, Mass.: Harvard University Press, 1913. xi, 384 p. Illus., chapter bibliis., reading list.

This is not a history of the Grange. It is a review of the political aspects of the Grange movement, its social force in relation to fundamental agricultural conditions, products, prices.

Morrison, Denton E., ed. FARMERS' ORGANIZATIONS AND MOVEMENTS: RESEARCH NEEDS AND A BIBLIOGRAPHY OF THE UNITED STATES AND CANADA. North Central Regional Research Publication no. 220. East Lansing: Michigan State University Agricultural Experiment Station, 1970. 116 p. Title, place, person, organization, and movement indexes.

Part 1 includes essays, by W. Keith Warner, Denton E. Morrison, and Harvey J. Schweitzer, about the need for research in the field of farmer organizations.

Part 2: "A Bibliography of United States and Canada General Farm Organizations and Movements," has 998 entries, dated from 1920 through 1968.

### FARM POLICY

Buse, Reuben C., and Bromley, Daniel W. *APPLIED ECONOMICS: RESOURCE ALLOCATION IN RURAL AMERICA*. Ames: Iowa State University Press, 1975. viii, 623 p. Illus., tables, chapter biblios.

This introductory text reviews the farm problems from different approaches--resource allocation, technology from publicly supported research and development, market organization, increases in production. Suggests programs to improve structure of demand-supply.

Clawson, Marion. *POLICY DIRECTIONS FOR U.S. AGRICULTURE; LONG RANGE CHOICES IN FARMING AND RURAL LIVING*. Baltimore, Md.: Johns Hopkins University Press, [1968]. 415 p. Illus., tables, reading list.

Purpose of this book is to present an overview of agriculture, its people, labor, living conditions, services, output, demand, trade prices, and income. There is no coverage of marketing and supply industries.

Part 2: "Farming as a Business" includes chapter 14: "Public Programs Affecting Agriculture and Rural Life," pp. 199-220.

Part 3: "A Look Ahead to the Year 2000," pp. 249-382, has four chapters on potential and likely changes.

Tables are based on the 1959 Census of Agriculture.

Cochrane, Willard W. *THE CITY MAN'S GUIDE TO THE FARM PROBLEM*. Minneapolis: University of Minnesota Press, [1965]. 254 p. Illus., tables, maps.

Places the agricultural sector in its relationship to other sectors in the economy. Explains the modern agricultural complex: farming operations; nonfarm supply for farmers; the marketing system; government services. Outlines basic farm problems, including political stalemate, and the city man and the commercial problem.

Hallett, Graham. *THE ECONOMICS OF AGRICULTURAL POLICY*. New York: Augustus M. Kelley, Publishers, 1968. ix, 292 p. Chapter biblios., reading list.

Provides a foundation for understanding agricultural economics and the need for government intervention in price formation and structural policies. Distinguishes between the ideal structure and the goal of agricultural policy.

Hathaway, Dale E. *GOVERNMENT AND AGRICULTURE; PUBLIC POLICY IN A DEMOCRATIC SOCIETY*. New York: Macmillan, [1963]. 425 p. Tables.

Intended as a review of agricultural policy in the United States

since World War II, with a look at various policy proposals.

Part 1 covers the pressures for public action, gaps between desires and reality. Part 2 looks into the "Economics of the Farm Problem," and part 3 covers "The Process of Policy Formation." Part 4 presents "Potentials and Obstacles of Selected Policy Alternatives."

Heady, Earl O. AGRICULTURAL POLICY UNDER ECONOMIC DEVELOPMENT. Ames: Iowa State University Press, [1962]. 682 p.

Chapter 16: "Public Policy in Research, Education and Development," pp. 594-628.

Chapter 17: "U.S. Agriculture and World Economic Development," pp. 629-67.

Heady, Earl O.; Haroldsen, Edwin O.; Mayer, Leo V.; and Tweeten, Luther G. ROOTS OF THE FARM PROBLEM; CHANGING TECHNOLOGY, CHANGING CAPITAL USE, CHANGING FARM NEEDS. Ames: Iowa State University Press, [1965]. ix, 224 p.

Chapter 12: "A Picture of Agriculture in 1980," pp. 194-217.

Directed to those who plan inputs for agriculture--industry, education, and administrators who develop farm policy.

Heady, Earl O.; Mayer, Leo V.; and Madsen, Howard C. FUTURE FARM PROGRAMS; COMPARATIVE COSTS AND CONSEQUENCES. Ames: Iowa State University Press, [1972]. viii, 411 p. Illus.

Analyzes policies for land retirement, diversion, and other methods for supply control which bypass farm labor, nonfarm rural community, and low-income farmers. Offers two methodological studies as policy alternatives.

Heady, Earl O., and Srivastava, Uma K., eds. SPATIAL SECTOR PROGRAMMING MODELS IN AGRICULTURE. Ames: Iowa State University Press, [1975]. 501 p. Illus., diagrs., chapter biblios. Tables on microfiche in pocket, inside back cover.

This book includes selected models from those developed over the past twenty years by Dr. Heady and his associates in the Center for Agricultural and Rural Development at Iowa State University. As computer capabilities have developed, the models have included more data, in order to assist resource planning and policymaking.

Houthakker, Hendrick S. ECONOMIC POLICY FOR THE FARM SECTOR. Washington, D.C.: American Enterprise Institute for Public Policy Research, 1967. 61 p.

This study gives a brief history of American farm policy from earliest

periods through the 1960s, and presents a case for a national coordinated policy which would provide stability for price and farm income.

International Economic Association. ECONOMIC PROBLEMS OF AGRICULTURE IN INDUSTRIAL SOCIETIES: PROCEEDINGS. Edited by Giuseppe Ugo Papi and Charles Nunn. New York: St. Martin's Press, 1969. viii, 671 p.

The papers are in agreement that the agricultural sector calls for a distinct set of policy guidelines.

Part 4 focuses on the problems in developed agriculture, particularly that of keeping up to date with information about innovations and their impact on production, labor, market structure, and the economy as a whole.

Iowa State University. Center for Agricultural and Economic Development. ADJUSTMENTS IN AGRICULTURE; A NATIONAL CASEBOOK. Ames: Iowa State University Press, [1961]. 393 p. Illus.

U.S. agricultural data, assembled, coordinated, and interpreted for use by those concerned with agriculture. Published under sponsorship of the National Commission for Farm Policy, the Farm Foundation, and the Center for Agricultural and Economic Development.

\_\_\_\_\_. FARMERS IN THE MARKET ECONOMY: MARKET ORGANIZATION AND COMPETITIVE BEHAVIOR IN RELATION TO FARMER'S PRICES, COSTS AND INCOMES. Ames: Iowa State University Press, [1964]. vi, 308 p. Illus.

Papers from a conference, assembled and published under the sponsorship of Iowa State University Center for Agricultural and Economic Development.

Papers analyze the process of change in the economy and the markets with which farmers deal.

Section 4 discusses collective action--cooperative marketing, marketing agreements and orders, marketing quotas--for improving farm income.

\_\_\_\_\_. FOOD GOALS, FUTURE STRUCTURAL CHANGES IN AGRICULTURAL POLICY; A NATIONAL BASEBOOK. Ames: Iowa State University Press, [1969]. x, 325 p.

Twenty-one authorities on price, income, and farm support programs presented these papers at a conference aimed at providing a base for evaluating and formulating long-run policies for U.S. agriculture.

Johnson, D. Gale. FARM COMMODITY PROGRAMS; AN OPPORTUNITY FOR CHANGE. Washington, D.C.: American Enterprise Institute for Public Policy Research, [1973]. 116 p.

Three crop programs are used in this study: wheat, cotton, and feed grains. The discussion reviews post-World War II agricultural policy and suggests a new approach to farm programs for the last quarter of this century.

Johnson, D. Gale, and Schnittker, John A., eds. U.S. AGRICULTURE IN A WORLD CONTEXT; POLICIES AND APPROACHES FOR THE NEXT DECADE. New York: Praeger Publishers, 1974. 301 p. Tables.

The study, sponsored by the Rockefeller Foundation, was published for the Atlantic Council of the United States. The report resulted from discussions held by the Council in 1972 and 1973.

Objective of the study was to direct attention of U.S. agriculture to its role in the world agricultural system.

In chapter 2, John Schnittker traces public policy in the United States from the 1920s to the 1960s. There is a discussion of the importation of agricultural products not produced in the United States. The competitive products in world trade, such as grain and sugar, are examined in terms of the agricultural policies of various nations. Chapters 4 to 6 cover policies in Europe, Canada, Australia, New Zealand, Japan, China, USSR, and Eastern Europe.

McCrone, Gavin. THE ECONOMICS OF SUBSIDISING AGRICULTURE; A STUDY OF BRITISH POLICY. Toronto: University of Toronto Press, [1962]. 189 p.

Agriculture is an important sector in the British economy. This book explores the economic problems of agricultural size in terms of output, labor, and capital. Subsidies to agriculture are judged on the basis of their value in stimulating needed development in agriculture.

National Commission on Food and Fiber. FOOD NEEDS AND U.S. AGRICULTURE IN 1980: AN ANALYSIS OF LAND, LABOR, AND CAPITAL REQUIREMENTS UNDER VARYING LEVELS OF EXPORTS AND ALTERNATIVE FARM PROGRAMS. Washington, D.C.: Government Printing Office, 1967. 129 p. Illus., maps, tables. Paperbound.

"The study from which this report originates was done by the Center for Agricultural and Economic Research at Iowa State University, which has a sophisticated agricultural policy model."



National Research Council. Committee on Agricultural Production Efficiency. AGRICULTURAL PRODUCTION EFFICIENCY. Washington, D.C.: National Academy of Sciences, 1975. ix, 199 p.

A report to the nation about the present and potential food supply.

"Some Potentials for the Future," pp. 196-97, recommends genetic improvement of crops and livestock; disease control and growth hormones for plants and animals; trickle irrigation; temperature modification; sewage water reclamation.

"Toward Public Policies and Programs," pp. 198-99, recommends emphasis on legume crops, improvement in livestock reproduction capacities, study of transportation and storage facilities.

National Research Council. Committee on Agriculture and the Environment. PRODUCTIVE AGRICULTURE AND A QUALITY ENVIRONMENT, FOOD PRODUCTION, LIVING, RECREATION, AND RURAL URBAN INTERFACE. Washington, D.C.: National Academy of Sciences, 1974. vii, 189 p. Reading list.

Three steps are recommended: interdisciplinary research and development, improved communication in rural areas, and enlargement of data sources.

Appendix has information on the use of fragile lands: blow lands, wash lands, wetlands. Table: "Resource Areas Class IV Land Considered Fragile," p. 160.

Organization for Economic Co-operation and Development. AGRICULTURAL POLICY IN CANADA. Agricultural Policy Series. Paris: 1973. 74 p.

Not examined.

\_\_\_\_\_. AGRICULTURAL POLICY IN THE UNITED KINGDOM. Agricultural Policy Series. Paris: 1974. 66 p.

State of agriculture, policy objectives, and measures in the United Kingdom are reported. A section covers impact of the European Common Market on prices and markets. Environmental problems and policies on pesticides and waste disposal are included.

\_\_\_\_\_. AGRICULTURAL POLICY IN THE UNITED STATES. Agricultural Policy Series. Paris: 1974. 108 p.

Analyzes problems of markets, prices, structures in agriculture in the United States.

Reische, Diana L., ed. U.S. AGRICULTURAL POLICY. The Reference Shelf, vol. 28, no. 3. New York: H.W. Wilson Co., 1966. 211 p.

Explores facets of the farm problems as not one but many problems. The section on farm policies in recent decades emphasizes price supports. There is a section on the farm labor battle, and the migrant worker. The last section takes a look at future farm policy.

Ruttan, Vernon Wesley; Waldo, Arley D.; and Houck, James P., eds. *AGRICULTURAL POLICY IN AFFLUENT SOCIETY*. New York: W.W. Norton & Co., [1969]. 338 p. Illus., reading list.

The authors examine five sets of market linkages between U.S. agriculture and the other sectors of the economy. They are convinced that agricultural policy should be defined on a broader basis than just agricultural products.

The article by George E. Brandow, "In Search of Principles of Farm Policy," pages 116-28, discusses four objectives of farm policy within goals and values of the common good. Brandow suggests that applied and basic research for technological progress must continue as a public responsibility.

Reprint of Kenneth Boulding's verses: "The Old Agricultural Lag," pp. 317-18.

Socolofsky, Homer E. *ARTHUR CAPPER; PUBLISHER, POLITICIAN AND PHILANTHROPIST*. Lawrence: University of Kansas Press, 1962. 287 p. Illus., ports.

The story of the Farm Bloc and Arthur Capper's thirty-four years (1915-49) in the U.S. Senate as spokesman for agriculture.

Included in the book is information on the Capper farm publications and their editorial policy.

Shepherd, Geoffrey S. *FARM POLICY; NEW DIRECTIONS*. Ames: Iowa State University Press, [1964]. ix, 292 p. Illus., tables, maps.

Covers early views of the U.S. farm programs, with appraisal of their inadequacy to deal with the problem. Suggests, in outline, programs of a different kind to replace those which have not provided solutions.

Tweeten, Luther G. *FOUNDATIONS OF FARM POLICY*. Lincoln: University of Nebraska Press, [1970]. xi, 537 p.

Places farm policy in its social, economic, and political setting for understanding, interpretation, and analysis.

Chapter 10: "Commodity Programs; A Short History," pp. 300-321, covers the period since 1960.

### AGRICULTURAL PRODUCTS IN WORLD TRADE—GOVERNMENT POLICY

Committee for Economic Development. A NEW TRADE POLICY FOR THE UNITED STATES; A STATEMENT OF NATIONAL POLICY BY THE RESEARCH AND POLICY COMMITTEE. New York: 1974. 66 p. Illus.

The study reviews the changes in the world food economy, population, and consumption patterns, plus new pressures affecting food output and costs. These changes bring the United States into a new relationship with world food supply. As a result, the role of government intervention in U.S. agriculture should be reexamined. A profile of U.S. agriculture is described in detail, with statistics.

Summary of the committee report is presented on pages 24-28. Offers policy recommendations on price support, production adjustment and income, trade, and domestic agriculture.

FARMER'S WORLD; THE YEARBOOK OF AGRICULTURE. 1964. Washington, D.C.: U.S. Department of Agriculture, 1964. 608 p. Illus., maps.

This edition of the yearbook is devoted to farm problems, with three articles related to foreign trade in agricultural products.

Irwin R. Hedges writes on "The Trade Expansion Act of 1962," pp. 379-84.

Robert L. Gastineau authored the article on "Preferential Trade Agreements," pp. 482-86.

John C. School covers the problem of "[International] Commodity Agreements," pp. 486-94.

Richter, J.H. AGRICULTURAL PROTECTION AND TRADE. New York: Praeger Publishers, 1964. xi, 148 p.

This study explores the problem of reconciling national support for agriculture with the need for agricultural trade.

In chapter 7, "Seminar on Trade Policy," the Kennedy round is discussed on page 40; the leaf tobacco case, pages 44-48; "The War of the Chicken," pp. 48-60.

Chapter 9: "The Pisani Plan," pp. 73-83.

U.S. TRADE POLICY AND AGRICULTURAL EXPORTS. Edited by Elizabeth S. Ferguson for the Iowa State University Center for Agricultural and Rural Development. Ames: Iowa State University Press, 1973. viii, 228 p. Illus., tables.

"World trade has become one of the most important components of demand for U.S. farm products—one in each five acres, one of each eight workers in the farm sector."

## Chapter 4

### REFERENCE MATERIALS RELATED TO PART 1

#### BIBLIOGRAPHIES

Besterman, Theodore. [WORLD] AGRICULTURE, A BIBLIOGRAPHY OF BIBLIOGRAPHIES. Totowa, N.J.: Rowman & Littlefield, 1971. 302 p.

Covers agriculture, forestry, horticulture, and special subjects.

Entries are by country. Number of entries in each cited bibliography is indicated in brackets.

Number of entries indicate growth of serial publications in a subject field. For successive editions, dates of the first and of the most recent editions are given.

Bush, E.A.R. AGRICULTURE; A BIBLIOGRAPHIC GUIDE. 2 vols. Macdonald Bibliographic Guides Series. London: William Macdonald & Co., [1974]. 2 vols. 1,612 p. Author, subject indexes.

Purpose of this guide is to call attention to existing references, offering worldwide coverage, dated from 1958 through 1971. Periodicals are cited by title and country of origin. References are arranged in the volumes by Universal Decimal Classification.

In the entries, general references appear first, followed by works in 170 subject categories. Pages are arranged in three columns with headings for the entry number of items cited in the work, brief annotation.

Fusonie, Alan M., comp. HERITAGE OF AMERICAN AGRICULTURE: A BIBLIOGRAPHY OF PRE-1860 IMPRINTS. Library List no. 98. Beltsville, Md.: U.S. Department of Agriculture, National Agricultural Library, 1975. 71 p. Paperbound.

"The purpose of this bibliography is to provide a list of printed source materials which to varying degrees contain useful informa-

tion concerning various aspects of pre-Civil War developments in agriculture and its related fields in the United States."

The monographs selected from the National Agricultural Library collection are followed by library call numbers; those not in the library are indicated by an asterisk. Includes a list of agricultural societies by state, and selected periodical titles, with volumes and dates published.

Schlebecker, John T., comp. BIBLIOGRAPHY OF BOOKS AND PAMPHLETS ON THE HISTORY OF AGRICULTURE IN THE UNITED STATES, 1607-1967. Santa Barbara, Calif.: ABC-CLIO, 1969. vii, 183 p. Subject index.

For those who wish to look into the history of agriculture in this country. Some annotations.

Prepared under contract with the Smithsonian Institution. Titles included are those having to do with "the business of raising things on purpose."

### REFERENCE BOOKS

COUNTY AGENTS DIRECTORY. Flossmoor, Ill.: C.L.R. Mast & Associates, 1915-- . Annual.

A valuable reference for anyone in the agricultural field.

General information on fairs, expositions, and selected national events.

Lists agricultural experiment stations, state directors, county agents, by state; national and state associations; national registry associations for cattle, swine, sheep, and goats.

Explains how to obtain information from the Department of Agriculture.

A DICTIONARY OF AGRICULTURAL AND ALLIED TERMINOLOGY. Edited by John N. Winburne. East Lansing: Michigan State University Press, 1962. 905 p.

Words and idiomatic expressions used in the agricultural industries are defined, with encyclopedic explanations free of technical language. The terms used for plant material are given under the Standardized Plant Names, the scientific name, when applicable, and a descriptive annotation.

References to publications from the nineteenth century to 1954 are listed by subject in appendix A.

MANUAL OF REMOTE SENSING. 2 vols. Falls Church, Va.: American Society of Photogrammetry, 1975. 2,144 p. Illus. (part color), glossary.

Vol. 1: THEORY, INSTRUMENTS, AND TECHNIQUES.

Vol. 2: INTERPRETATION AND APPLICATIONS.

Chapter 18: "Range Resources; Inventory, Evaluation and Monitoring," pp. 1427-28, author-editor, Charles E. Poulton.

Chapter 22: "Soils & Crops," pp. 1715-1813, author-editor, Victor I. Myers.

List of contributors: vol. 2, pp. 2111-21.

Wasseman, Paul, and Kemmerling, Diane, comps. COMMODITY PRICES: A SOURCEBOOK AND INDEX. Detroit: Gale Research Co., [1974]. 212 p.

This book provides references to wholesale and retail quotations for more than 5,000 agricultural, industrial, commercial, and consumer products.

United States and Canadian publications, which publish commodity prices regularly or seasonally, are arranged alphabetically by title under commodity.

This is a thorough revision of SOURCES OF COMMODITY PRICES (New York: Special Libraries Association, 1959).

## SERVICES

AGRICOLA (formerly CAIN/NAL).

AGRICOLA data base includes documents in BIBLIOGRAPHY OF AGRICULTURE, National Agricultural Library Catalog, Food & Nutrition Information Center, and American Agricultural Economic documents. This data base is available in two commercial systems--Lockheed DIALOG and that of the System Development Corporation.

BIOLOGICAL AND AGRICULTURAL INDEX. New York: H.W. Wilson Co., 1964-- . Monthly, except August.

This publication indexes 188 English-language periodicals on agriculture and related subjects. The list of periodicals indexed is chosen by subscriber vote. Book reviews, appearing in the periodicals indexed, are listed alphabetically by author in a special section in each issue. The publication is cumulative, with an annual bound volume.

Prior to 1964, this work was entitled AGRICULTURAL INDEX. The 1975 volume is numbered twenty-nine and covers periodicals indexed from August 1974 through July 1975.

Caponio, Joseph F., and Bracken, Marilyn C. SELECTED FOOD AND AGRICULTURE DATA BASES IN THE U.S.A. Washington, D.C.: U.S. Department of Agriculture, 1973. 81 p.



## Reference Materials

---

An inventory of seventy-nine data bases in food and agriculture, briefly described. Eleven different categories are covered, including animal science, plant science, soil science, and water resources. Purpose of the inventory is to help identify and locate little-known sources of both Citation Data Base and Information Data Base types. Listings are by category, title, location, and description.

CURRENT CONTENTS: AGRICULTURAL, BIOLOGY, AND ENVIRONMENTAL SCIENCES. Philadelphia, Pa.: Institute for Scientific Information, 1970-- . Weekly.

Reproduces contents pages of currently received journals in English and foreign languages. List of journals added/dropped appears at regular intervals. Author names with addresses are carried on the final pages in each issue.

NATIONAL AGRICULTURAL LIBRARY CATALOG. Totowa, N.J.: Rowman & Littlefield, 1971-- . Monthly.

Includes the holdings in the National Agricultural Library catalog.

The publisher issued a seventy-three-volume catalog of holdings published between 1862 and 1965. The holdings published between 1966 and 1970 were covered in twelve bound volumes, eight of which were for names and four for subjects.

Beginning in 1971 numerical listings of references for authors, titles, and indexes have been published monthly. This catalog information is cumulated in June and in December.

These catalogs are usually located in large libraries which are depositories for U.S. government publications.

## PERIODICALS

Additional information on these periodicals can be found in part 7: Appendixes.

BIG FARMER. Frankfort, Ill.: Big Farmer, 1928-- . 6/year.

For executives who manage, own, or operate large agricultural operations or family farms. Current information on agribusiness developments. Issues four special editions: "Accounting Ideas," "Management Practice," "Return on Investment," "New Farming Ideas."

FARM EQUIPMENT RED BOOK. Kansas City, Mo.: Intertec Publishing Co. Annual.

This farm equipment reference annual contains official "Nebraska

Test Reports for Tractors"; technical specifications for farm tractors and power-operated farm equipment, including basic units and component parts, by manufacturer. The 1960 annual carried tractor serial numbers for the years 1942 through 1959.

FARMER. St. Paul, Minn.: Webb Co., 1882-- . Semiannual.

Published for upper midwest crop and livestock farmers. Articles by staff and agricultural college experts. Carries as regular departments: weather, legislation, markets, farm engineering.

FARM JOURNAL. Philadelphia, Pa.: Farm Journal, 1877-- . Monthly, except June/July.

"The business magazine of American agriculture." Published for Class I-III farm operators and their families. Farm production, management, and news. Issued in regional editions, with demographic editorial content.

GREEN BOOK. London: Thomas Reed Industrial Press, 1951-- . Semiannual.

One section in this machinery buyers' guide has a multilingual glossary of terms--English, German, Russian, and Spanish. Another section lists manufacturers, including concessionaires for companies manufacturing outside the United Kingdom.

The product section includes tractors, power units, sowing and planting equipment. The new developments section lists type of equipment and manufacturer.

OFFICIAL GUIDE: TRACTORS AND FARM EQUIPMENT. St. Louis, Mo.: National Farm and Power Services. Semiannual.

Includes Nebraska Tractor Test Data, table of tractor speeds, and so forth. Lists tractors by manufacturer with information on model series, test performance, description, model numbers by year, weight, price F.O.B. in dollars.

Includes a trading chart and average resale prices. Also lists harvesting equipment by manufacturer.

PRAIRIE FARMER. Oak Brook, Ill.: Prairie Farmer Publishing Co., 1841-- . Bimonthly, except December.

A management paper for the cornbelt farmer, with special editions for Indiana and Illinois. Takes the "how to" approach in editorials.

PROGRESSIVE FARMER. Birmingham, Ala.: Progressive Farmer Co., 1886-- . Monthly.

Published in fifteen separate editions to serve farm managers in

## Reference Materials

---

the South and southwestern regions of the country.

**SUCCESSFUL FARMING.** Des Moines, Iowa: Meredith Corp., 1902-- . Monthly.

"The magazine of farm management for families making farming their business."

Regular editorial reports on the Washington scene, money, marketing, crops, machinery.

### U.S. GOVERNMENT SERIAL PUBLICATIONS

**AGRICULTURAL FINANCIAL REVIEW.** Washington, D.C.: U.S. Department of Agriculture, Economic Research Service, 1938-- . Annual.

Reports on trends and research on a broad range of agricultural financial issues as they relate to farm and rural finance; financial management and firm growth strategies; insurance; income; farm supply; processing and distribution industries; financial institutions, taxation; organization of agricultural production.

Contributed articles, with abstracts, are written in a nonmathematical, nontechnical style. Book reviews are included in each edition.

**AGRICULTURAL OUTLOOK.** Washington, D.C.: U.S. Department of Agriculture, Economic Research Service, 1975-- . 11/year.

This publication has replaced **MARKETING & TRANSPORTATION SITUATION** and the **DEMAND & PRICE SITUATION**.

A section, "Statistical Indicators," in the issues carries information in tables by state, and total for United States. The "Market Basket" list of selected foods showing payments to farmers for equivalent units and prices at retail, formerly published in **MARKETING & TRANSPORTATION SITUATION**, is published here.

Inside back cover has list of new publications of the Department of Agriculture and some states. A tear-out coupon is provided for ordering free bulletins; priced items have address of publishers.

**AGRICULTURAL PRICES.** Washington, D.C.: U.S. Department of Agriculture, Statistical Reporting Service, Crop Reporting Board, 1925-- . Monthly.

A report on prices received by farmers; prices paid by farmers in interest, taxes, and wages; ratio of index of prices received to index of prices paid.

An annual summary is published in June, with detailed breakdown of farmer-paid prices. A list of crop-marketing seasons for specific crops and an offer of special bulletins are also in this issue.

December issue has a special index to feature articles including information on the subject, period to which data are related, and month published in AGRICULTURAL PRICES.

AGRICULTURAL RESEARCH. Washington, D.C.: U.S. Department of Agriculture, 1953-- . Monthly.

This periodical reports findings of agricultural research. Illustrated. Cumulated index approximately every three years.

AGRICULTURAL SITUATION.\* Washington, D.C.: U.S. Department of Agriculture, Statistical services, 1920-- . 11/year.

Crop reporter's magazine.

Regularly includes "Briefings on Research," "Survey Scope," "Statistical Barometer."

AGRICULTURAL STATISTICS. Washington, D.C.: U.S. Department of Agriculture, 1936-- . Annual. Paperbound.

The 1975, 631-page edition of this compendium of statistics contains historical series limited generally to data beginning in 1959 or later. In the 1972 edition, statistical tables begin with 1929 for principal crops; with 1930 for livestock figures. Most fruit and vegetable tables begin with 1944. Other basic tables showing national totals begin with 1949 or 1954 (livestock and poultry tables, one year later).

Covers fourteen different subject areas with statistical tables, the number of tables depending upon subject. For example: three tables on maple syrup, five on sugar beets, ten pages of tables on rice. Other tables: "Farm Resources, Income and Expenses"; "Taxes, Insurance, Cooperatives, and Credit"; "Agricultural Conservation and Forestry"; "Consumption and Family Living"; "Miscellaneous"; imports, exports, weather, commodity futures, fisheries, refrigeration, Alaskan statistics.

References at bottom of pages refer to earlier editions for prior years of data coverage. Detailed index.

AVAILABLE PUBLICATIONS OF U.S. DEPARTMENT OF AGRICULTURE'S AGRICULTURAL MARKETING SERVICE. Agricultural Marketing Service no. 546. Rev. ed. Washington, D.C.: U.S. Department of Agriculture, 1974. 14 p. Folder plus order form.

Lists free publications by subject, with publication number and date issued or revised. A few titles include prices. Instructions for ordering are given.

## Reference Materials

---

THE BALANCE SHEET OF THE FARMING SECTOR. Washington, D.C.: U.S. Department of Agriculture, 1945-- . Annual.

"The balance sheet as of January 1 which views the farm sector of agriculture as one large enterprise, and brings together individual series of farm assets and claims to those assets. It also includes the value of farm assets owned, and farm debt owed, by landlords."

CHANGES IN FARM PRODUCTION AND EFFICIENCY. Washington, D.C.: U.S. Department of Agriculture, 1954-- . Annual.

"Presents major statistical series on farm production inputs, and efficiency and provides in one place the latest information on production trends, changes in farm inputs and practices, uses of cropland, labor productivity, and farm mechanization." Five supplements, each covering an aspect in the basic report.

DIRECTORY OF AGRICULTURAL RESEARCH SERVICE. Washington, D.C.: U.S. Department of Agriculture, November 1974. ii, 165 p. Maps, name index.

Planned for updating twice a year. Lists service groups by region and division, with addresses. Index of individuals' names, coded to refer to addresses. Address list: pages 131-39.

FARM-OPERATOR FAMILY LIVING EXPENDITURES. Special Survey no. 6. Washington, D.C.: U.S. Department of Agriculture, 1975.

Detailed summary of U.S. family farm living expenditures for 1973, by economic class.

FARM PRODUCTION EXPENDITURES. Special Survey no. 5. Washington, D.C.: U.S. Department of Agriculture, 1975.

Detailed summary of expenditures 1971 survey data for the United States and geographic regions.

FARM REAL ESTATE MARKET DEVELOPMENTS. Washington, D.C.: U.S. Department of Agriculture, Economic Research Service, National Economic Analysis Division, 1946-- . Annual, with one or two supplements.

The publisher is responsible for semiannual surveys of farm real estate, and the compilation of data for this publication.

Surveys are conducted among farm real estate brokers, local bankers, county officials, and others in order to obtain information on actual farm sales and indications of general farm conditions.

The annual publication contains a summary of the real estate market developments; the farm transfers with details about the seller (individual or corporate) and the type of sale (voluntary, estate

settlement, foreclosure); participants in the market and their intended use of the land within the next five years; cash rents for pasture and for cropland; farm mortgage lending. Detailed tables show the data in many aspects--such as value per acre of grazing land in eleven western states; indexes of average value per acre for dry land, for irrigated land, and so on.

FEDERAL-STATE MARKET NEWS REPORTS; A DIRECTORY OF SERVICES AVAILABLE. Agricultural Marketing Service no. 551. Rev. ed. Washington, D.C.: U.S. Department of Agriculture, 1975. 54 p.

Lists federal-state market news offices by city and the reports issued from these offices, with the title of report and the frequency of issue. Includes a map of news service offices. Gives information for ordering reports.

FOREIGN AGRICULTURAL TRADE OF THE UNITED STATES. Washington, D.C.: U.S. Department of Agriculture, 1946-- . Monthly, with two annual supplements. Annual index.

This statistical and analytical review emphasizes current status and outlook for U.S. agricultural trade, including exports under specified government-financed programs, commercial exports, price developments, and quantity index for selected commodity groups.

Two annual supplements, one by calendar year and the other by fiscal year, are published.

GLOSSARY OF TERMS USED IN FEDERAL-STATE MARKET NEWS REPORTS. Agricultural Marketing Service no. 566. Washington, D.C.: U.S. Department of Agriculture, 1975. 4 p. Folder.

HIRED FARM WORKING FORCE: A STATISTICAL REPORT. Agricultural Economic Report no. 297. Washington, D.C.: U.S. Department of Agriculture, 1945-- . Annual.

The 1974 report published in 1975 had twenty-nine pages and was prepared by Gene A. Rowe. No reports were published 1953-55 or 1962.

The study deals with persons fourteen years of age and over who did farm work for wages at some time during the year covered.

Statistical tables include days of farm work; per diem wage; averages for year, age, and place of residence. The breakdown is regional, nonmigratory, migratory, age, sex, race.

JOB SAFETY AND HEALTH. Washington, D.C.: U.S. Department of Labor, Occupational Safety and Health Administration, 1972-- . Monthly.

Official magazine of the Occupational Safety and Health Adminis-



tration. Carries articles about safety standards applied to various occupations. Regular departments include news briefs, reader forum, publications available.

MAJOR STATISTICAL SERIES OF THE U.S. DEPARTMENT OF AGRICULTURE--HOW THEY ARE CONSTRUCTED AND USED. Agricultural Handbook no. 365. 11 vols. Washington, D.C.: U.S. Department of Agriculture.

Volumes, date of issue, with total pages follow:

Volume 1: AGRICULTURAL PRICES AND PARITY. October 1970. 40 p.

Volume 2: AGRICULTURAL PRODUCTION AND EFFICIENCY. April 1970. 40 p.

Volume 3: GROSS AND NET FARM INCOME. September 1969. 17 p.

Volume 4: AGRICULTURAL MARKETING COSTS AND RETURNS. June 1970. 37 p.

Volume 5: CONSUMPTION AND UTILIZATION OF AGRICULTURAL PRODUCTS. April 1972. 38 p.

Volume 6: LAND VALUES AND FARM FINANCE. April 1971. 35 p.

Volume 7: FARM POPULATION AND EMPLOYMENT. November 1969. 17 p.

Volume 8: CROP AND LIVESTOCK ESTIMATES. May 1971. 30 p.

Volume 9: FARMER COOPERATIVES. October 1970. 30 p.

Volume 10: MARKET NEWS--FEDERAL-STATE MARKET NEWS STATISTICS. 1972. 42 p.

Volume 11: FOREIGN TRADE, PRODUCTION AND CONSUMPTION OF AGRICULTURAL PRODUCTS. April 1972. 30 p.

"Occupational Safety and Health Act of 1970 (OSHA 2001)." FEDERAL REGISTER 40 (April 25, 1975): 18254-68.

Includes administrative regulations for safety and health standards for agricultural operations.

Parts of the regulations cover "Roll-Over Protective Structures" for agricultural tractors such as seatbelts, and construction features to prevent spillage of fuel, oil, and so forth, and to protect from sharp surfaces.

Methods for guarding other types of agricultural equipment were being developed as this manuscript was prepared.

OUTLOOK FOR U.S. AGRICULTURAL EXPORTS. Washington, D.C.: U.S. Department of Agriculture, Economic Research Service, 1972-- . Quarterly.

Analytical review of short-term outlook for U.S. agricultural exports and imports. February issue shows a forecast for next fiscal year.

U.S. CENSUS OF AGRICULTURE. Washington, D.C.: U.S. Bureau of the Census. Every five years.

When the census is published, advance reports, preliminary reports, and final chapters are released in paperback form, followed by the bound volumes.

U.S. Congress.

The House of Representatives Committee on Agriculture, and the Senate Committee on Agriculture and Forestry conduct hearings. Published record of hearings, special reports to the committees, and committee prints are available in the United States Public Documents departments of large libraries.

U.S. IMPORT DUTIES ON AGRICULTURAL PRODUCTS. Agricultural Handbook no. 368. Prepared by Donald M. Nelson, Jr., and Annett A. Pariot. Washington, D.C.: U.S. Department of Agriculture, 1970. 280 p.

Supersedes Handbook no. 143, published in 1959.

"This report generally contains U.S. import duties and import taxes that have been in effect on agricultural products from June 1930, the effective date of the Tariff Act of 1930, to June 30, 1968. Exceptions, are, those items affected by concessions in the Kennedy Round."

## ORGANIZATIONS, ASSOCIATIONS, SOCIETIES, INSTITUTES

The addresses of all public organizations listed here are given in part 7: Appendixes. Publications limited to members.

Agricultural Engineering Society (Australia)

Publishes AGRICULTURAL ENGINEERING AUSTRALIA. Quarterly.

Agriculture Council of America

Publishes AGRICULTURE, USA. Monthly; BACKGROUND WASHINGTON. Monthly.

American Agricultural Marketing Associates

## Reference Materials

---

American Society of Agricultural Engineers

Publishes AGRICULTURAL ENGINEERING, 1920-- . Monthly;  
TRANSACTIONS. Bimonthly; AGRICULTURAL ENGINEERS YEAR-  
BOOK, 1954-- .

American Society of Farm Managers and Rural Appraisers

Farm and Industrial Equipment Institute

Foundation for American Agricultural Program of the Farm Foundation

Institute for Agricultural Engineers (England)

National Council of Agricultural Employers

Part 2

AGRICULTURAL ENTERPRISES—FIELD CROPS



## Chapter I

### AGRONOMY

#### GENERAL INFORMATION

Pearson, Lorentz C. PRINCIPLES OF AGRONOMY. New York: Van Nostrand Reinhold Co., [1967]. 448 p. Illus., reading list, glossary.

Aims to provide background in agronomy, and to interest students in the opportunities, the objectives, and the careers in this field.

Chapters 11-13, pages 211-65, cover research in agronomy, statistics, design of experiments, methods of evaluating experiments.

Chapter 16: "Agronomic Classification of Farm Crops," pp. 305-11.

#### SOIL IN RELATION TO PLANTS

Bear, Firman E., ed. SOIL IN RELATION TO CROP GROWTH. New York: Van Nostrand Reinhold Co., 1965. 297 p. Illus.

Designed for those who wish to know soil fundamentals--its properties and the factors affecting plant growth. The book covers nutrient and water requirements, irrigation and drainage, mechanical manipulation--tillage, fertilizing.

Yield potentialities of crop plants, pages 280-90.

Black, C.A. SOIL-PLANT RELATIONSHIPS. 2d ed. New York: John Wiley & Sons, [1968]. vii, 792 p. Illus., chapter bibliographies.

This edition places more significance on measurements of soil properties. Assumes knowledge of soil, plant physiology, and the basic sciences.

Chapters cover soil characteristics, water, aeration, exchangeable bases, soil audits, salinity, excess sodium, nitrogen, phosphorous, potassium.

Fertilizers (phosphorous-bearing), pages 619-26. Fertilizers and fer-



tilization (potassium-bearing), pages 723-29.

Buckman, Harry O., and Brady, Nyle C. THE NATURE AND PROPERTIES OF SOILS. 7th ed. New York: Macmillan, [1969]. 671 p. Illus., glossary.

The eighth edition, 1974, was not available for examination. That edition is edited by Nyle C. Brady.

Chapters cover supply and availability of nutrients in soils, organisms in the soil; forms of soil water, movement, and relation to plants.

Chapter 19: "Fertilizers and Fertilizer Management," pp. 524-60.

Chapter 20: "Farm Manure and Green Manure," pp. 561-79.

Cook, R.L. SOIL MANAGEMENT FOR CONSERVATION AND PRODUCTION. New York: John Wiley & Sons, [1962]. 539 p. Illus. (part color), tables.

Considers the capability of the land and fitting crops to the soils; also management of tillage, planting methods, cropping systems in the U.S. regions.

Cooke, G.W. THE CONTROL OF SOIL FERTILITY. New York: Hafner Press, [1967]. 543 p. Illus.

Background in general principles of crop nutrition, aimed at the farmer. States scientific basis for and discusses results of experiments with fertilizers and organic manure on crops in different farming systems.

Chapter 23: "Weather and Crop Nutrition," pp. 327-37.

Chapter 30: "New Farming for Old," pp. 461-74. Reviews the work during the eighteenth and nineteenth centuries by farmers to improve the fertility of soil. Now the results of organized research are available to the farm manager.

Davies, D.B.; Eagle, D.J.; and Finney, J.B. SOIL MANAGEMENT. Ipswich, [England]: Farming Press, [1972]. 254 p. Illus., diags.

Approaches soil management from view that soil is the farmer's raw material for growing crops for profit. Also aims to maintain long-term soil fertility.

Chapter 7: "Soils and Traction," pp. 102-15, has information on draught developed by the tractor tires in terms of types and pressures.

Chapter 8: "Traffic and Soil Damage," pp. 116-27, discusses effects of traffic, compaction of soil, tractor weight, tire size, and wheelslip.

Chapters 9 through 11 are about tillage and cultivation implements and their effect on soil.

Chapter 15: "Cultivation Systems for Crop and Soil," pp. 204-20, has information on management of sand, clay, silt, and peat-type soils, with examples of crops for each type.

Appendix 2 has a "Rapid Test for Salt in Irrigation Water for Field Crops."

Donahue, Roy L. OUR SOILS AND THEIR MANAGEMENT; INCREASING PRODUCTION THROUGH SOIL AND WATER CONSERVATION. 3d ed. Danville, Ill.: Interstate Printers & Publishers, [1970]. 683 p. Illus., maps, charts, glossary.

Concerned with soil science, soil and water management for plants. Each chapter begins with an outline. Five chapters discuss soil properties and describe the types and uses of fertilizers. Three chapters discuss soil and water management for specific crops.

Chapter 12: "Irrigation," pp. 363-89.

Chapter 13: "Drainage," pp. 391-405.

Appendix A: "For Further Information from U.S. Department of Agriculture," pp. 639-44.

Donahue, Roy L.; Shikluna, John C.; and Robertson, Lynn S. SOILS; AN INTRODUCTION TO SOILS AND PLANT GROWTH. Englewood Cliffs, N.J.: Prentice-Hall, [1971]. 607 p. Illus., glossary.

Introduction for students of all ages to soils, soil ecology, and plant environment.

Part 1 is devoted to soil science and plant growth. Part 2 discusses application of soil science to plant growth.

Foster, A.B. APPROVED PRACTICES IN SOIL CONSERVATION. 4th ed. Danville, Ill.: Interstate Printers & Publishers, [1973]. 519 p. Illus., maps.

Prepared for the practitioner who wishes to apply conservation practices without technical assistance. Changes in farming practices affecting application of conservation measures are described.

Chapter 1: "Using Land Within Its Capabilities," pp. 1-22, has chart: "Definition of Land Capability Classes," p. 13, to aid in determining whether land is suited either to crops or to pasture or woodland.

Chapters 6 and 7: "Farming on the Contours" and "Contour Fences," pp. 87-107.

Chapter 19: "Laying Out and Constructing Farm Drainage," pp. 365-405, includes list of activities in approved practices.

Hillel, Daniel. SOIL AND WATER PHYSICAL PRINCIPLES AND PROCESSES. New York: Academic Press, [1971]. 302 p. Illus., charts, reading list, author and subject indexes.

This textbook assumes little or no knowledge of the subject, and is designed for students and professional workers in agriculture.

The first part of the book covers physical principles in the relationship between soil and water. The second portion concentrates on "Field Water Cycle," infiltration of water into the soil, redistribution of moisture following infiltration, groundwater drainage, evaporation, uptake of soil water by plants.

Knuti, L.L.; Korpi, Milton; and Hide, J.C. PROFITABLE SOIL MANAGEMENT. 2d ed. Englewood Cliffs, N.J.: Prentice-Hall, [1970]. 376 p. Illus., 225 photos., glossary.

Text in nontechnical language.

Chapter 17: "Our National Soil and Water Conservation Problem," pp. 245-60.

Chapter 18: "Soil and Water Conservation and Management on the Farm," pp. 261-92.

Mulcady, L.F. HOW GOOD IS YOUR LAND? A HANDBOOK OF LAND EVALUATION. Extension Service Bulletin no. A1222. [Madison]: University of Wisconsin Cooperative Agricultural Extension Service, 1974. 24 p. Illus.

This bulletin stresses the importance of soils and the evaluation of soil capabilities in order to determine the best use for the land.

Includes a "Soil Study and Evaluation Guide," pages 12-14.

OPTIMIZING THE SOIL PHYSICAL ENVIRONMENT TOWARD GREATER CROP YIELDS. Edited by Daniel Hillel. New York: Academic Press, 1972. 252 p. Chapter biblios., subject index.

Papers presented at an invitational panel convened as part of the International Symposium on Soil-Water Physics and Technology, Hebrew University, Faculty of Agriculture, Rehovot, Israel, 22 August-5 September 1971.

Topics focus on efficient management of water--irrigation, salinity, control of soil water, and improvement of soil structure, root development, analysis of growth parameters and their fluctuations in seeking increased crop yields.

Thompson, Louis Milton, and Troeh, Frederick R. SOILS AND SOIL FERTILITY. 3d ed. New York: McGraw-Hill Book Co., [1973], 495 p. Illus., maps, chapter biblios.

Planned as a basic text in soils with broad coverage. Discusses land use, soil and water management.

Chapter 19: "Soil Erosion and Its Control," pp. 450-82.

## FERTILIZERS AND FERTILIZATION OF THE SOIL

FERTILIZER TECHNOLOGY AND USE. 2d ed. Madison, Wis.: Soil Science Society of America, 1971. ix, 611 p. Glossary, subject index.

Introductory chapters cover the role of fertilizer in agricultural development, the economy of fertilizer use, and the world market.

There is special coverage of fertilizers for different kinds of soils and fertilizer combined with chemicals for pest control. A chapter covers use of animal and human wastes as fertilizer.

Gues, J.G. De. FERTILIZER GUIDE FOR TROPICAL AND SUBTROPICAL FARMERS. Zurich: Centre d'Etude de l'Azote, [1967]. 727 p. Illus., reading list, crop index.

A general introduction to soils and fertilizers. Parts of the text apply principles to specific crops--cereals, root crops, sugar crops, commercial vegetables.

Kilmer, V.J.; Younts, S.E.; and Brady, N[yle].C. ROLE OF POTASSIUM IN AGRICULTURE. Madison, Wis.: American Society of Agronomy, Crop Science Society of America, 1968. 526 p. Chapter biblios.

Proceedings of a symposium sponsored and financed by Tennessee Valley Authority and cosponsored by American Potash Institute, held at the National Fertilizer Development Center, 18-19 June 1968.

The symposium was aimed at farm managers and others concerned with use of fertilizers.

The contributed articles are arranged in "From Mine to Man" subject sequence and offer important information on potassium technology.

Several papers deal with potassium in the nutrition of specific crops--forage, soybeans, corn, vegetables.

McVickar, Malcolm H. USING COMMERCIAL FERTILIZERS; COMMERCIAL FERTILIZERS AND CROP PRODUCTION. 3d ed. Danville, Ill.: Interstate Printers & Publishers, [1970]. 352 p. Illus., tables, glossary.

A useful reference for those who work with or advise others on fertilizer usage.

Chapter 2: "The Fertilizer Industry, Past and Present," pp. 7-16, lists important dates and significant developments in the industry. Illustrated by tables showing consumption of fertilizer in the United States by geographic region.

Chapter 17: "Special Uses of Fertilizer," pp. 247-62.

Appendixes 1-3: "Location of Producing Plants in United States

for Various Types of Fertilizer."

Appendix 4: "Pertinent Information on Fertilizer Control Laws and Regulation, by State," pp. 330-42.

Sauchelli, Vincent. PHOSPHATES IN AGRICULTURE. Rev. ed. New York: Van Nostrand Reinhold Co., [1965]. vii, 277 p. Illus., reading list, author and subject indexes.

Discusses phosphorous in soils and plants, and management practices in relation to availability of phosphates.

Chapter 6: "Phosphate Rock and Phosphatic Fertilizers," pp. 113-56.

\_\_\_\_\_, ed. FERTILIZER NITROGEN, ITS CHEMISTRY AND TECHNOLOGY. New York: Van Nostrand Reinhold Co., [1964]. viii, 424 p.

Reviews the various agricultural and technological phases of the nitrogen industry. Contributors discuss the role of nitrogen in agriculture.

Chapter 3: "Soil Nitrogen," pp. 15-39, by F.J. Stevenson.

Chapter 18: "Comparing Efficiency of Nitrogen Fertilizer," pp. 365-91, by John T. Pesed, Jr.

Chapter 19: "Tests for Soil Nitrogen," pp. 392-401, by O.J. Attoe.

STATISTICS OF CROP RESPONSES TO FERTILIZERS. Rome: Food and Agriculture Organization of the United Nations, 1966. 112 p. Tables.

Purpose of this manual is to bring together the results of field trials in order to estimate fertilizer requirements. The intent is to develop a standardized design for experiments and techniques.

Appendix C shows response models for fertilizer data.

Tisdale, S.L., and Nelson, W.L. SOIL FERTILITY AND FERTILIZERS. 3d ed. New York: Macmillan, [1975]. vii, 694 p.

This text on fertility of soils and fertilizer manufacturing assumes basic knowledge of soils.

Chapter 9: "Manufacture of Nitrogen, Phosphorous, and Potassium Fertilizer," pp. 342-64.

Chapter 10: "The Manufacture and Properties of Mixed Fertilizers," pp. 365-97.

Chapters 12-16, pages 439-646, present latest ideas in soil fertility, evaluation, fertilizer application and use, economies of lime. Includes updated and revised citations to latest published experimental data.

## IRRIGATION AND DRAINAGE OF FARM LAND

Boyko, Hugo, ed. SALINE IRRIGATION FOR AGRICULTURE AND FORESTS. The Hague: Dr. W. Junk N.V. Publishers, 1968. 349 p.

Proceedings of an international symposium on plant growing with highly saline or seawater, with or without desalination. Organized by the World Academy of Art and Science, in cooperation with the Accademia Nazionale di Agricoltura and the Consiglio Nazionale delle Ricerche, and cosponsored by UNESCO.

One hundred and twenty-four experts from twenty-four countries resolved that arid areas can produce crops where saline water is available.

Branson, Farrel A.; Gifford, Gerald F.; and Owen, J. Robert. RANGELAND HYDROLOGY. Range Science Series no. 1. Denver: Society for Range Management, [1972]. 84 p. Illus., reading list.

Major concerns of this study on rangeland hydrology are runoff from watersheds; erosion and sedimentation; quality of water; and occurrence of ground water.

Afterword, pages 70-72, emphasizes need for further investigation and study. Advises the systems approach to watershed management.

DRAINAGE OF AGRICULTURAL LAND; A PRACTICAL HANDBOOK FOR THE PLANNING, DESIGN, CONSTRUCTION, AND MAINTENANCE OF AGRICULTURAL DRAINAGE SYSTEMS. Port Washington, N.Y.: Water Information Center, [1972?]. 400 p. Illus., diags., maps.

Reproduced from section 16 of NATIONAL ENGINEERING HANDBOOK (Washington, D.C.: U.S. Department of Agriculture, Soil Conservation Service, 1971).

Defines terms used in drainage systems enterprises. Chapters cover principles of drainage; drainage investigation; surface drainage; subsurface drainage; open ditch design and construction; dikes; drainage pumping; drainage of organic soil and tidal lands.

Israelson, O.W., and Hansen, V.E. IRRIGATION PRINCIPLES AND PRACTICES. New York: John Wiley & Sons, [1962]. ix, 447 p.

Beginning chapters cover sources of water, means of conveyance to the land, measurement of flow into and through the soil.

Chapter 10: "Salt Problem in Soil and Water," pp. 207-30.

Chapter 12: "When to Irrigate; How Much Water to Apply," pp. 266-87.

Chapters 15 and 16 cover irrigation implements and structures, and sprinkler irrigation.

Chapter 18: "Legal and Administrative Aspects of Drainage and Irrigation," pp. 374-82. Covers private enterprise, quasi-public and public enterprises.

Appendix D, table 11.13: "Total Consumption and Peak Use, Western United States," pp. 414-16. Tabulation by crop and region of seasonal water use, in terms of days.

Laverton, Sylvia. IRRIGATION: ITS PROFITABLE USE FOR AGRICULTURAL AND HORTICULTURAL CROPS. London: Oxford University Press, 1964. viii, 166 p. Illus., charts, glossary.

A practical approach to use of irrigation in crop management. Chapters 6, 7, and 8 discuss equipment for costs of, and profits from, irrigation. Tables compare costs of production by crop with irrigation and without irrigation.

Luthin, James N. DRAINAGE ENGINEERING. New York: John Wiley & Sons, [1966]. 250 p. Illus.

An interdisciplinary approach to drainage. Based on developments in the past several decades. It is now possible to design systems in terms of the effect of water table on plants.

Discusses drainage needed in both arid and humid regions to provide root environment suitable for maximum growth of plants.

Ruttan, Vernon W. THE ECONOMIC DEMAND FOR IRRIGATED ACREAGE: NEW METHODOLOGY AND SOME PRELIMINARY PROJECTIONS, 1954-1980. Baltimore, Md.: Johns Hopkins University Press, 1965. 139 p. Illus., tables.

Published for Resources for the Future, this book covers regional resources, productivity, and cost comparisons. Projections on irrigated acreage to 1980 are discussed in relation to irrigation policy.

Appendixes include alternative resource productivity coefficients and factor marginal value; productivity estimates for water resource and farming regions; total and average farm output and input measures for water resource regions, national and regional farm output projections.

Examined and annotated by Chia-Lin Wong, University of California, Riverside.

Taylor, James A., ed. THE ROLE OF WATER IN AGRICULTURE. Oxford: Pergamon Press, [1970]. 252 p. Illus., charts, chapter biblios., author and subject indexes.

Based on papers and discussions at a symposium held at the Welsh Plant Breeding Station of the University of Wales, near Aberystwyth, 19 March 1969.

Topics range from rainfall measurements and sediment yields from forested and agricultural lands, to cumulated effects of irrigation on fruit crops.



Paper by R.C. Hills: "Effect of Agricultural Treatment on the Quantity of Water Available," pp. 89-100.

Chapter 14 contains the edited summary of discussions, conclusions, and implications.

## ARID AND SEMI-ARID LAND

ARID LANDS IN TRANSITION: PAPERS. Publication no. 90. Edited by Harold D. Dregne. Washington, D.C.: American Association for the Advancement of Science, 1970. 537 p. Illus., maps.

Edited papers contributed at an International Conference on Arid Lands in a Changing World, held 3-13 June 1969 at the University of Arizona, Tucson.

Reviews present knowledge of problems and potentials of water supply, irrigated agriculture, school and adult education in the field, and political aspects.

Paper by R.A. Perry: "Productivity in Arid Australia," pp. 303-16.

Arnon, Daniel I. CROP PRODUCTION IN DRY REGIONS. 2 vols. Edited by Nicholas Palunin. London: Leonard Hill Books, [1972]. 1,381 p. Illus., chapter bibliis.

Volume 1: BACKGROUND AND PRINCIPLES, 672 p. Covers arid climate and effect on crop production; land use; water resources development; irrigation; crop and fertilizer introduction; tillage; control of weeds, insects, and plant disease. Index references to the United States, Canada, and Australia.

Volume 2: SYSTEMATIC TREATMENT OF PRINCIPAL CROPS, 709 p. Sections devoted to crops of economic importance--forage, grain, oilseeds--their origin, adaptability, characteristics, and varieties. Crop management for yield and utilization is emphasized.

Chapter 11: "Range Pastures and Their Improvement," pp. 505-42.

Chapter 12: "Irrigated Perennial Pastures," pp. 543-70.

Harris, Lorin E. RANGE NUTRITION IN AN ARID REGION. Faculty Honor Lecture no. 36. Logan: Utah State University, Faculty Association, 1968. 95 p.

Basic methods for range nutrition in an arid region and results of experiments in utilization of reseeded grasses, are presented by Dr. Harris, from his more than twenty-two years of range research.

Ideas for the rancher are included. Supplements for sheep on the winter range, as well as grazing schemes for spring and fall are given on pages 67-75.

INTERNATIONAL SYMPOSIUM ON INCREASING FOOD PRODUCTION IN ARID LANDS: PROCEEDINGS. ICASIS Publication no. 3. Edited by Thadis M. Box and Paulino Rojas-Mendoza. Lubbock: Texas Technological College, International Center for Arid and Semi-Arid Land Studies, 1969. 352 p. Illus.

Papers presented at an international symposium 22-25 April 1968 in Monterrey, Mexico. English abstracts are given for original papers written in other languages. Three of the twenty-eight papers are mentioned here.

"Water-use Efficiency on Arid and Semi-Arid Lands," pp. 91-108, by J.R. Johnston and C.E. Van Doran, U.S. Agricultural Service, Bushland, Texas.

"Livestock Production Potential from Arid Lands," by Martyn Buterworth, Monterrey Technical Institute and Advanced Studies.

"New Uses for Arid Range Plants," by Cyrus M. McKell, J.R. Goodin, and Edmerado Garcia-Moya, Drylands Research Institute, University of California, Riverside.

McGinnies, William G. DESERTS OF THE WORLD; AN APPRAISAL OF RESEARCH INTO THEIR PHYSICAL AND BIOLOGICAL ENVIRONMENT. Tucson: University of Arizona Press, [1968]. 816 p. Illus., maps.

"A comprehensive, evaluative inventory of the state of current knowledge about desert environments," prepared under the direction of Dr. McGinnies, with William G. Goldman and Patricia Paylore. A U.S. contribution to the International Hydrological Decade.

Useful to those who are planning, managing, and implementing research or development in arid parts of the world.

Information about U.S. deserts is reported according to state, with description of soil on pages 308-11; plants on pages 443-48. Table 7: "Life Forms of the North American Desert," p. 447.

Australian deserts are described on pages 148-52, with state of knowledge of soils on pages 302-5, and general description of plant communities on pages 432-36. Research on the desert coastal zones of Australia is appraised on pages 671-73 for the western coast, and on page 674 for the southern coast. Pertinent publications on Australian deserts are listed on pages 248-53.

Table 1, part B: "List of Soil Authorities by Country," pp. 313-15.

## Chapter 2

### PLANTS

#### PLANT BREEDING

Allard, R.W. PRINCIPLES OF PLANT BREEDING. New York: John Wiley & Sons, [1960]. xi, 485 p. Illus., tables.

Introductory approach to reproductive systems and plant breeding methods. Covers genetic basis of breeding, breeding for disease resistance, hybridization, mutation breeding, distribution and maintenance of improved varieties.

Excludes principles of genetics, but does treat selectively genetic aspects such as population, systems of mating, unity of basic methods for breeding self-pollinating and cross-pollinating species.

Briggs, Fred N., and Knowles, P.F. INTRODUCTION TO PLANT BREEDING. New York: Van Nostrand Reinhold Co., 1967. 444 p.

For the advanced student of agriculture. Assumes a knowledge of general botany, genetics, and crop production.

Frey, Kenneth J., ed. PLANT BREEDING, A SYMPOSIUM. Facsimile ed. Ames: Iowa State University Press, [1966]. x, 430 p. Illus., chapter biblios.

Chapters by twenty-four contributors assess the progress of eight research areas in plant breeding.

Chapter 8: "Quantitative Genetics in Plant Improvement," pp. 315-54, by G.F. Sprague.

Chapter 9: "Genetic Control of Physiologic Processes," pp. 355-89, by A.M. Srb.

Chapter 10: "Plant Breeding--Prospects for the Future," pp. 391-407, by G.W. Burton.

Sustaining Members of the Plant Breeding Symposium: p. vii.

Painter, Reginald H. INSECT RESISTANCE IN CROP PLANTS. Lawrence: University Press of Kansas, 1968. 520 p. Illus., reading list. Paperbound.

Brings together references from the literature in order to summarize work on certain crops--wheat, alfalfa, corn, potatoes, sorghum, and so forth.

Poehlman, J.M. BREEDING FIELD CROPS. New York: Henry Holt Co., 1959. 427 p. Illus.

This introductory textbook discusses the plant breeder and his work. Genetics in relation to plant breeding, as well as general methods and techniques, are explained.

An illustrated section covers breeding specific crops--grains, root, and forage crops.

Seed production practices are covered on pages 387-402. Research for developing better varieties in ongoing research is conducted by public and private agencies. In the United States, most of this work is under direction of the Department of Agriculture cooperative extension and experiment stations with agricultural colleges. Describes four types of seed: breeder, foundation, registered, and certified.

## PLANT PROPAGATION AND GROWTH

Hammett, K.R.W. PLANT PROPAGATION. New York: Drake Publishers, [1973]. 64 p. Illus., line drawings by Christine M. Hammett, photographs by Alan Underhill and the author.

The book is designed to explain "basic principles that influence plant propagation."

Hartman, Hudson [T.], and Kester, D.E. PLANT PROPAGATION; PRINCIPLES AND PRACTICES. 2d ed. Englewood Cliffs, N.J.: Prentice-Hall, 1968. x, 702 p. Illus., reading list.

A manual describing principles and techniques of propagating plants.

General aspects--seeds, spores; cuttings, grafting; budding; layering; special methods.

"The Plant Patent Law," pp. 215-16.

Leopold, Aldo Carl. PLANT GROWTH AND DEVELOPMENT. New York: McGraw-Hill Book Co., [1964]. xi, 466 p. Illus., chapter bibliographies, author and subject indexes.

This textbook uses the case-history approach in study of the growing plant. Separates growth and development from nutrition and metabolism.

Part 1 covers aspects of assimilation; part 2, factors in growth; part 3, stages of development.

The last two chapters consider aspects of environment physiology and chemical modification.

## PLANT DISEASES

Bawden, F.C. PLANT VIRUSES AND VIRUS DISEASES. 4th ed. New York: Ronald Press Co., [1964]. vii, 361 p. Illus., chapter biblios., author and subject indexes.

Chapter 5: "Methods of Transmission," pp. 84-107, covers seed, soil-borne diseases, dodder, grafting.

Chapter 6: "Transmission by Animals While Feeding," pp. 110-47.

Maramorosch, Karl, ed. VIRUSES, VECTORS AND VEGETATION. New York: Wiley-Interscience, 1969. 678 p. Chapter biblios., author and subject indexes.

Brings together studies and findings on interaction between viruses, their carriers, and plants.

Contributors list: p. ix.

National Research Council. Committee on Genetic Vulnerability of Major Crops. GENETIC VULNERABILITY IN MAJOR CROPS. Washington, D.C.: National Academy of Sciences, 1972. 307 p.

A study of the, 1970 corn blight epidemic in the United States.

Part 1 studies the corn blight epidemic along with other individual crop vulnerabilities. Part 2 discusses individual crops. Part 3: "The Challenge of Genetic Vulnerability," pp. 285-304.

Van der Plank, J.E. PLANT VIRUSES; EPIDEMIC AND CONTROL. New York: Academic Press, 1963. 365 p. Illus.

Although aimed at plant breeders and plant pathologists concerned with breeding, others will find use for this book in protecting plants from disease.

The book begins with a chapter about interest on money, followed by a chapter on the logarithmic increase in plant pathogens explained by an analogy to simple interest on money. Other chapters explain methods for plotting the progress of an epidemic.

Chapters on control of plant disease stress the importance of sanitation.

Walker, J.C. PLANT PATHOLOGY. 3d ed. New York: McGraw-Hill Book Co., [1969]. xi, 819 p. Illus., chapter biblios. Photographs by Eugene Herrling; drawings copied from originals by Barbara Blumenfeld Endres.

An introduction to plant pathology covering nonparasitic and bacterial diseases as well as those incited by nematodes and viruses. Treatment and control cover exclusion and eradication, protection, and host resistance.

Western, J.H., ed. DISEASES OF CROP PLANTS. London: Macmillan, [1971]. 404 p. Illus.

Chapters cover the assessment of disease and also review legislation and crop health. Each contributor writes on a specialty.

Chapter 3: "Seed Pathology," pp. 21-36, by Mary Noble.

Chapter 6: "Breeding for Disease Resistance," pp. 62-87, by J.D. Hayes and T.D. Johnston.

"Alphabetical List of the Main Pathogenic Fungi with Diagnostic Data," pp. [379]-98.

Wheeler, B.E., Jr. AN INTRODUCTION TO PLANT DISEASES. London: John Wiley & Sons, [1969]. ix, 374 p. Illus., chapter biblios.

Introduces reader to the study of diseases in plants. Chapters cover damping-off, blights, root and foot rots, wilts, downy and powdery mildews, rusts, smuts, blight, anthracnose, leaf spots, leaf curl, galls, cankers, scab, mosaics and yellows, post-harvest diseases.

Discusses means of plant disease control--legislation, inspection, eradication by removal and destruction of pathogens, correction of cultural practices, breeding for disease resistance.

## Chapter 3

### FIELD CROPS

#### CROP PRODUCTION PRACTICES

Brickbauer, E.A., and Mortenson, W.P. APPROVED PRACTICES IN CROP PRODUCTION. Danville, ill.: Interstate Printers & Publishers, [1967]. 418 p. Illus., glossary.

Prepared for young people looking ahead to an agricultural career. Emphasizes importance of land management.

Eleven key questions are answered with regard to selection of crops.

Part 1: "Feed, Forage Crops and Grasses," pp. 3-118.

Part 2: "Grain, Fiber, and Tobacco," pp. 121-302.

Hughes, H.D., and Metcalfe, D.S. CROP PRODUCTION; PRINCIPLES AND PRACTICES. 3d ed. New York: Macmillan, [1972]. xi, 627 p. Illus., chapter biblios., glossary.

This edition, designed to stimulate thinking, presents basic principles of crop production.

Chapter 6: "Climate, Weather and Crops," pp. 71-86.

Tables 9-11: "Botanical Classification of Some of the More Important Crop Plants," pp. 118-21.

Janick, Jules, et al. PLANT SCIENCE: AN INTRODUCTION TO WORLD CROPS. 2d ed. San Francisco: W.H. Freeman & Co., [1974]. 740 p. Illus., chapter biblios.

Calls attention to world crop production from the viewpoint of science, technology, and economics.

Part 2: "Strategy of Crop Production," pp. 279-412, covers cropping systems and practices, nutrition, water, crop hazards, crop improvement.



## Field Crops

---

Kipps, Michael Smith. PRODUCTION OF FIELD CROPS; A TEXTBOOK OF AGRONOMY. 6th ed. New York: McGraw-Hill Book Co., 1970. x, 790 p. Illus., glossary, name and subject indexes.

Part 1: "Fundamental Principles of Crop Production," including description, adaptation, uses, date of seeding, fertilizers, cultivation, irrigation, harvesting.

Lockhart, J.A.R., and Wiseman, A.J.L. INTRODUCTION TO CROP HUSBANDRY. 3d ed. Oxford: Pergamon Press, [1975]. 316 p. Illus., tables.

A "grammar" for modern farming, this agronomy text introduces the practice and science of crop management.

Covers soils, plants, fertilizers, cropping, grasslands, weeds, pests, and diseases of farm crops.

Lovegrove, H.T. CROP PRODUCTION EQUIPMENT. London: Hutchinson Publishing Group, [1968]. 423 p. Illus.

For farm apprentices, trainees, and more experienced farmers. The text attempts to explain the relationships between machines, soils, and crops. Goes into detail on crop production equipment. Makes reference to tractors only when necessary. Each machine is discussed in use on a type of field procedure.

Martin, J[ohn].H., and Leonard, W[arren].H. PRINCIPLES OF FIELD CROP PRODUCTION. 2d ed. New York: Macmillan, [1967]. 1,044 p. Illus., glossary.

Fundamentals essential to understanding crop production in the United States.

Appendix, Table A-1: "Seeding, Seed and Plant Characteristics," tabulates by crop the following data: botanical name, seeding rate per acre, seeds per pound, germination time, growth habit, chromosome numbers, photoperiodic reaction.

Mitchell, Roger L. CROP GROWTH AND CULTURE. Ames: Iowa State University Press, [1970]. viii, 349 p. Illus., chapter biblios.

Aim of the book is to present principles underlying the practices used in culturing crop plants.

Describes the physiological process in which light and nutrients are transformed into products promoting plant growth. Discusses development, growth regulators, pest control.

Ochse, J.J.; Soule, M.J.; Dijkman, M.J.; and Weblburg, C. TROPICAL AND SUBTROPICAL AGRICULTURE. 2 vols. New York: Macmillan, 1961. 1,446 p.

Volume 1 is devoted to chapters on crops.

Volume 2 indexes common plant names, authors, and subjects.

Park, R.D., and Eddowes, Maurice. CROP HUSBANDRY. 2d ed. [London]: Oxford University Press, 1975. vi, 323 p. Illus., tables.

The first part of this textbook deals with crop production in Britain and the European Economic Community. Part 2 covers factors affecting farm cropping.

Part 3 is on crop production in practice, and includes Chapter 9: "Seed and Seed Management," pp. 177-207.

Part 4: "Some Financial Aspects of Crop Production," has two chapters: "Crop Organization and Management," and "Cropping for Profit."

Chapter 10: "Arable Cash Crops [in Britain]," pp. [208]-50, includes green fodder crops--kale, cabbages, rape, and fodder radish; fodder root crops--Swedes, turnips, mangels, maize.

Chapter 12: "Grassland," pp. [251]-76, discusses uncultivated, permanent pastures, as well as pastures arising from the use of temporary grasses as a rotation crop. Discusses different kinds of pasture grasses, herbage, and weed control.

Wilson, Harold K., and Ricker, A. Chester. PRODUCING FARM CROPS. Danville, Ill.: Interstate Printers & Publishers, [1960]. 336 p. Illus., maps.

Presents efficient methods of growing crops; emphasizes principles of cause and effect; stresses the use of information on new selections.

Classification of plant crops is presented in terms of relationship to soil and rotation of crops. The types of crops for forage, biennial and perennial, are discussed with respect to the end use of these plants.

## CEREAL GRAIN—GENERAL

Christensen, Clyde Martin, and Kaufman, H.H., eds. GRAIN STORAGE: THE ROLE OF FUNGI IN QUALITY LOSS. St. Paul, Minn.: American Association of Cereal Chemists, [1974]. 153 p. Illus.

This edition presents advances and concepts from "world-recognized authorities." Deals primarily with cereal grains.

Chapters cover the significance, behavior, and measurement of moisture; the biochemical and nutritional changes during storage. The procedures for grain drying, chilling aeration, sampling, inspecting, and grading grain are explained. Management of stored grain pests--insects, rodents, micro- and macro-organisms--are covered.

Leonard, Warren H., and Martin, John H. CEREAL CROPS. London: Macmillan, [1963]. vii, 824 p. Illus., chapter biblios.

The economic role of cereals, their botany, production, harvesting, and storage are covered in the first part of this book.

Part 2 covers corn and maize; part 3, wheat; part 4, rye, barley, oats; part 5, rice, sorghum, and millets. Each chapter in parts 2-5 covers the importance of the grain, its history and adaptation, botany, breeding, cultural practices, composition, processed products utilization, diseases and insect pests.

Walker, Rodney L., and Sharples, Jerry. RESERVE STOCKS OF GRAIN: A REVIEW OF RESEARCH. Washington, D.C.: U.S. Department of Agriculture, 1975. iv, 24 p.

"Study made because of recent low stocks and because changing world conditions appear to dictate that the U.S. grain market will have volatile prices in future unless policy measures are used to moderate those conditions."

Wills, Walter J. AN INTRODUCTION TO GRAIN MARKETING. Danville, Ill.: Interstate Printers & Publishers, [1964]. viii, 155 p. Tables, diags., reading list.

An overview of grain marketing. Chapter 2: "Grain Production and Utilization," pp. 5-14, reflects on the changes in the industry since World War II, particularly in feed grains. The chapter covers corn, wheat, and soybeans, illustrated by tables of statistics.

In chapter 3: "Organization of the Grain Industry," pp. 15-34, three diagrams from Economic Research Service graphically present major U.S. marketing channels for wheat, feed grains, and soybeans. This chapter discusses the grain and its function in the marketing process.

Chapter 10: "Government in Grain Marketing," pp. 141-48, includes warehouse regulations, grade standards, and agency regulations.

Other chapters cover grain grades, futures trading, transportation, storage, prices and pricing, foreign trade.

### CEREAL GRAIN—CORN

Aldrich, Samuel R., and Leng, Earl R. MODERN CORN PRODUCTION. Champaign, Ill.: A & L Publications, 1965. 302 p. Illus., charts.

All about corn: its growth; hybrid selection; seedbed preparation; plant spacing for high yields; management of fertilizer and water.

Section 10 includes information on harvesting and storing silage and grain corn.

Inglett, G.E., ed. CORN: CULTURE, PROCESSING, PRODUCTS. Westport, Conn.: AVI Publishing Co., 1970. ix, 369 p. Illus., chapter biblios.

An interdisciplinary review of the important economic aspects of corn: culture, harvesting, conditioning, storage, farm uses of corn. Emphasis is on current interest and technological progress.

Chapter 17 discusses sweet corn.

Johnson, William H., and Lamp, Benson J. PRINCIPLES, EQUIPMENT AND SYSTEMS FOR CORN HARVESTING. Wooster, Ohio: Agricultural Consulting Associates, 1966. 385 p. Illus., tables, chapter biblios.

This book considers harvesting as the most complex phase of corn production because of the many management alternatives. Information for choosing the optimum harvesting conditions is limited, because these conditions are constantly changing.

Corn as a crop, its moisture, and the influence of weather in harvesting and drying are described in relation to harvesting machinery.

Reviews status, costs, capacity, and power requirements of mechanical harvesting. Functional requirements and machine components for gathering, snapping, husking, shelling, separating, cleaning, field grinding, whole plant cropping, and blowing are described.

Pierre, W.H.; Aldrich, S[amuel].R.; and Martin, W.P. ADVANCES IN CORN PRODUCTION: PRINCIPLES AND PRACTICES. Ames: Iowa State University Press, [1966]. vii, 476 p. Chapter biblios.

Sixteen papers presented at the Corn Congress, sponsored by Chevron Chemical Company at Delevan, Wisconsin, 5-7 October 1964.

Sprague, G.F., and Larson, W.E. CORN PRODUCTION. Agricultural Handbook no. 322. Washington, D.C.: U.S. Department of Agriculture, in cooperation with the Michigan Agricultural Experiment Station, 1975. 39 p. Illus., maps, reading list.

Information on the physiology, soil requirements, and climate needs of corn. Topics range from production aspects--including weed, insect, and disease control--to harvesting as grain or silage.

Ullstrup, A.J. CORN DISEASES IN THE UNITED STATES AND THEIR CONTROL. Agricultural Handbook no. 199. Washington, D.C.: U.S. Department of Agriculture, in cooperation with Purdue University Experiment Station, 1974. 56 p. Illus. (part color).

Detailed coverage of parasitic diseases in corn caused by fungi, bacteria, viruses, and other agents.

### CEREAL GRAIN—WHEAT

Inglett, G.E., ed. WHEAT, PRODUCTION AND UTILIZATION. Westport, Conn.: AVI Publishing Co., 1974. ix, 500 p. Illus.

An interdisciplinary approach to all aspects of wheat, beginning with a chapter on "Breeding and Genetics," by John W. Schmid.

Many chapters are devoted to distribution of U.S. wheat and its uses for feed and industrial purposes.

Appendix: "Official Grain Standards of the United States."

Quisenberry, K.S. WHEAT AND WHEAT IMPROVEMENT. Madison, Wis.: American Society of Agronomy, 1967. 576 p. Illus., maps, chapter biblios.

Presents wheat in relation to its importance in worldwide distribution.

Discusses the wheat cell and its structure, culture, physiology, genetics and inheritance, and wheat breeding. Quality of hard, soft, and durum wheats and their markets are discussed. All types of wheat diseases are covered.

Tsen, Cho C., ed. TRITICALE: FIRST MAN-MADE CEREAL. St. Paul, Minn.: American Association of Cereal Chemists, 1974. 303 p. Tables.

Papers and several invited articles from the symposium held jointly by the American Association of Cereal Chemists and the International Union of Food Science and Technology.

Discussion centered on cross-breeding wheat (*Triticum*) and rye (*Secale*). The characteristics of the resulting grain and its nutritional and technological potential were reviewed.

### CEREAL GRAIN—RICE

Grant, Warren R., and Holder, Shelby H.G. "Recent Changes and the Potential for U.S. Rice Acreage." RICE SITUATION 26 (October 1975): 10-14. Map.

With the lifting of government restriction in 1973, acreages for rice expanded in 1975 to a record high, with potential for even further increase. Map covers the six major rice-growing areas in the United States.

Grist, D.H. RICE. 4th ed. [London]: Longman Group, 1968. 571 p. Illus., reading list.

Comprehensive coverage of rice includes U.S. production. Part 1 describes the rice plant, its characteristics, varieties and classifi-

cation, genetics and improvement; also, climate, soil, water supply, and control in cultivation of the grain.

Part 2: "Paddy Production," tells about methods of cultivation, including cultivation of dryland paddies. Chapter 13: "Fish Production in Paddy Field," pp. 276-80, describes multicropping.

Part 3: "Rice, the Product," covers storage, marketing, nutritional value.

Appendix 3: "Standards for Rice Terminology," pp. 471-72.

Appendix 5: "Specimen Field and Laboratory Record Cards for Rice Selection," pp. 476-84.

Appendix 6: "Species of Rice," p. 482.

Johnson, T.H.; Jodson, N.E.; Ballich, C.N.; and Rutger, J.N. "The Development of Early Maturing and Nitrogen-Responsive Rice Varieties in the United States." *RICE BREEDING*, 1972, pp. 61-76. Reading list.

Table: "Principal rice varieties developed in cooperation with federal-state breeding programs in the United States," p. 63. Tabulates variety, gives cereal investigation number, grain type, year released, station producing, breeders involved, parent varieties, duration (relative maturity).

## CEREAL GRAIN—SORGHUM

Doggett, H. *SORGHUM*. [London]: Longman Group, [1970]. 419 p. Illus.

Grain sorghum, its origin, history, classification, breeding, reproduction, hybridization, and agronomy are covered.

Chapter 4: "Plant Breeding," pp. 118-57, has a section: "Sorghum Breeding in the United States," pp. 118-21. Figure 5.1: "Regression of Yield RS 610 of Variety 'Martin' in the U.S.," p. 162.

Other references to U.S. sorghum production may be located through the index.

Chapter 9: "Syrup, Sorgos and Sudan Grass," compares the use of various sorghum grains for stock feed, forage, and sorgos for syrup and sugar.

Edmunds, L.H., and Zummo, Natal. *SORGHUM DISEASES IN THE UNITED STATES AND THEIR CONTROL*. Agricultural Handbook no. 468. Washington, D.C.: U.S. Department of Agriculture, 1975. 47 p. Illus., reading list.

Describes the four types of sorghums--grain, sweet, grass, broom-corn--their origins and uses.

Discusses disease problems of sorghums--foliage, stalk, root, including inflorescent types.

This handbook supersedes Farmer's Bulletin no. 1959.

GRAIN SORGHUM RESEARCH AND UTILIZATION CONFERENCE HELD 27 FEBRUARY-1 MARCH 1973. Lubbock, Tex.: Grain Sorghum Producers Association, 1974. 100 p.

Papers presented at panel discussion on sorghum diseases, pests, and breeding.

Wall, Joseph S., and Ross, William M., eds. SORGHUM PRODUCTION AND UTILIZATION. Westport, Conn.: AVI Publishing Co., 1970. x, 702 p. Chapter bibliis.

"This text is the first major work to bring together information on the production and use of sorghum, one of the world's leading cereal crops."

Chapter 5: "Cultivation of Grain Sorghum in the United States," pp. 167-99, by Nicholas M. Kramer [and] William M. Ross.

Several chapters cover use of sorghum grain: in the nutrition of ruminants, poultry, and swine; and as a forage crop.

Chapter 18: "Economic Considerations," pp. 627-64, by Clarence A. Moore and Kenneth R. Majors, has a section on production in the United States.

Chapter 19: "The Future of Grain Sorghum," pp. 665-86, by Clarence A. Moore and D.G. "Bill" Nelson, includes a section on "Public Policy and Administrative Decision in the United States."

## LEGUMES—PEANUTS

GROWING PEANUTS IN GEORGIA; A PACKAGE APPROACH. Bulletin no. 640. Rev. ed. Athens: University of Georgia, College of Agriculture, Cooperative Extension Service, 1973. 47 p. Illus. (part color), maps, tables.

This bulletin covers the peanut industry in Georgia. Peanut adaptation, varieties, seed and seed treatment, land preparation, fertilizers, planting and cultivation are pictured and described briefly. Illustrated text on control of diseases, weeds, and insects. Information is included on harvesting, curing, and marketing peanuts.

Johnson, F. Roy. THE PEANUT STORY. Murfreesboro, N.C.: Johnson Publishing Co., 1964. 192 p. Illus., charts, maps, chapter bibliis.

Background on the increase of peanut-derived products; development of peanut production and harvesting.



PEANUTS--CULTURE AND USES; A SYMPOSIUM. Sponsored by American Peanut Research and Education Association. Stillwater: Oklahoma State University, [1973]. vii, 684 p. Illus., tables, chapter bibliis.

This peanut source book is the work of thirty-eight specialists in peanut genetics, breeding, and cultivation, who contributed papers and met with review committees during a four-year period.

Scope of the papers includes history, economic importance, genetics, soil properties, water use, weed control, pests, diseases, harvesting, curing, marketing, quality of raw peanuts for manufactured products, peanut proteins, and value in human nutrition.

Index is topical, detailed, and contributes to the work as a reference source.

Selsam, Millicent E. PEANUT. New York: William Morrow & Co., [1969]. 46 p. Illus. (part color). Photographs by Jerame Wexler.

Although intended as a juvenile book, the illustrated text explains the peanut in a way to make most adults better informed on the reproduction and development of this food plant. Includes a line, page 7, "One more peanut is never enough."

Woodruff, J.G. PEANUTS; PRODUCTION, PROCESSING, PRODUCTS. 2d ed. Westport, Conn.: AVI Publishing Co., 1973. v, 330 p. Illus., tables.

This book stresses the contributions made by both agricultural inventions and the development of new applications to the production and marketing successes of the peanut.

Chapter 2: "World Production and Marketing of Peanuts," has a section, pp. 17-20, on government subsidy programs for oilseeds and includes tables comparing peanut-producing countries.

Chapters on culture, harvesting, curing, and shelling peanuts are followed by a chapter on storage. This chapter discusses aflatoxin, a fungus related to storage.

Chapters 6-11 are on the uses of peanuts.

Appendixes cover standards for the leading varieties of peanuts grown in the United States.

## LEGUMES—SOYBEANS

Caldwell, B.E., ed. SOYBEANS; IMPROVEMENT, PRODUCTION AND USES. Madison, Wis.: American Society of Agronomy, 1973. 681 p. Illus. (part color).

Introductory chapter on the origin, history, and development of the soybean industry in the United States, and world distribution.

Chapter 7: "Management," pp. 211-38, by J.W. Pendleton and E.E. Hartwig, covers planting practices, harvesting, storing, and record keeping.

Chapter 19: "Domestic Markets," pp. 589-618.

Noman, A.G., ed. THE SOYBEAN: GENETICS, BREEDING, PHYSIOLOGY, NUTRITION, MANAGEMENT. New York: Academic Press, 1963. 239 p.

Not available for examination.

### ROOT CROPS—POTATOES

Culpin, Claude. PROFITABLE FARM MECHANIZATION. 2d ed. London: Crosby Lockwood Staples, 1968. 344 p. Illus.

"Potato Planting, Potato Chitting, Transplanting," pp. 136-40.

"Harvesting Equipment for Potatoes," pp. 225-40.

Harrison, B.D. "Potato Viruses in Britain." In DISEASES OF CROP PLANTS, edited by J.H. Western, pp. 123-59. London: Macmillan, [1971].

Lapwood, D.H., and Hide, G.A. "Potato [diseases]." In DISEASES OF CROP PLANTS, edited by J.H. Western, pp. 89-122. London: Macmillan, [1971].

Leach, S.S., and Hudson, D.E. PRECUTTING SEED POTATOES FOR HIGHER QUALITY SEED AND GREATER RETURNS. Marketing Research Report no. 1035. Washington, D.C.: U.S. Department of Agriculture, 1975. 34 p. Illus.

Reports on studies begun in 1969 on methods of cutting, length of storage before planting, packing and shipping systems.

Fifteen recommendations for handling precut seed potatoes result from these studies, page 30.

Martin, J[ohn].H., and Leonard, W[arren].H. PRINCIPLES OF FIELD CROP PRODUCTION. 2d ed. New York: Macmillan, [1967]. 1,044 p.

Chapter 36: "Potatoes," pp. 847-80, covers economic importance, history, adaptation, botanical characteristics, cultural methods, harvesting, storage, and uses.

Smith, Ora. POTATOES: PRODUCTION, STORING, PROCESSING. Westport, Conn.: AVI Publishing Co., 1968. ix, 642 p. Illus., chapter biblios.

Summarizes findings of potato research throughout the world. An outgrowth of forty years research and experimentation on potatoes, this book is a useful reference.

Includes all aspects of the potato--the plant, seed value of tubers, chemical composition, varieties, soil preparation, planting, nutrition, cultivation, and weed control. Discusses Seed Potato Certification.

Chapter 14: "Harvesting Potatoes," pp. 328-43.

Chapter 21: "Potato Breeding Improvement," pp. 603-32.

## ROOT CROPS—SUGAR BEETS

Hull, R. "Sugar Beet Diseases." In DISEASES OF CROP PLANTS, edited by J.H. Western, pp. 160-80. London: Macmillan, [1971].

Humboldt, Russell T.; Alexander, John T.; Rush, George E.; and Hawkes, George R., eds. ADVANCES IN SUGARBEET PRODUCTION; PRINCIPLES AND PRACTICES. Ames: Iowa State University Press, 1971. 470 p. Illus.

This book was an outgrowth of the Sugarbeet Congress, financed by the Ortho Division, Chevron Chemical Company, held 8-10 December 1969 in Salt Lake City, Utah.

The late Thomas Theis wrote an outline of the industry--its history, present situation, and future outlook.

Environment, preparation of seedbed, planting, thinning, nutrition, irrigation management, disease and insect control are discussed. Factors affecting variety, development, seed production quality, harvesting, and delivery are included in the coverage.

Martin, J[ohn].H., and Leonard, W[arren].H. PRINCIPLES OF FIELD CROP PRODUCTION. 2d ed. New York: Macmillan, [1967]. 1,044 p.

Chapter 35: "Sugar Beets," pp. 826-46, covers economic importance, history, adaptation, botanical characteristics, hybrids or varieties, rotation, fertilization practices, cultural methods. Diseases, deficiency disorders, and nematodes are described.

Papavizas, George C., and Ayres, William A. APHANOMYCES SPECIES AND THEIR ROOT DISEASES IN PEA AND SUGAR BEET. Technical Bulletin no. 1485. Washington, D.C.: U.S. Department of Agriculture, 1974. 158 p. Illus., maps, diags., reading list.

Summary and review of present knowledge of root rots in two field crops.

## SUGAR CANE

Barnes, A.C. THE SUGAR CANE. 2d ed. New York: John Wiley & Sons, [1974]. 572 p. Illus., reading list.

A one-volume overview of the cane sugar industry, worldwide. This edition adds information on overhead spray irrigation, mechanization in harvesting, advances in testing, plus breeding, growing, soils, diseases, and pest control.

Chapter 4: "Sugar-Cane Growing Countries," pp. 57-132, has a section which covers the industry in Florida, Louisiana, and Hawaii.

Chapter 21 includes a section on research in Hawaii.

Other text references to cane sugar growing in Florida, Louisiana, Hawaii, and other parts of the United States can be located through the index.

Humbert, Roger P. THE GROWING OF SUGAR CANE. Rev. ed. Amsterdam: Elsevier Publishing Co., 1968. 779 p. Illus. (part color), tables, reading list, subject index.

Chapters cover soil-plant relationship, climate factors, seedbed preparation, planting, nutrition of sugar cane. Irrigation, drainage, control of flowering, and refining are also covered.

Chapter 10, "Harvesting and Transport," pp. 604-11, describes mechanization in cane agriculture, an area in which Hawaii and Louisiana have led the way.

Rat control is covered, pages 683-90; insects, pages 691-714.

Martin, J[ohn].H., and Leonard, W[arren].H. PRINCIPLES OF FIELD CROP PRODUCTION. 2d ed. New York: Macmillan, [1967]. 1,044 p.

Chapter 14: "Sugar Cane," pp. 376-90, with references.

Ochse, J.J.; Soule, M.J.; Dijkman, M.J.; and Weblburg, C. TROPICAL AND SUB-TROPICAL AGRICULTURE. 2 vols. New York: Macmillan, 1961. 1,446 p.

Chapter 14: "Sugar Cane," pp. 1197-1250.

## Chapter 4

### FORAGE CROPS: PASTURE AND RANGE MANAGEMENT

Campbell, Robert S., ed. RANGE RESOURCES OF THE SOUTHEASTERN UNITED STATES. ASA Special Publication no. 21. Madison, Wis.: American Society of Agronomy, 1973. 94 p. Illus., diags., tables.

Report of discussion at a 1972 symposium arranged jointly by the American Society of Agronomy and the Crop Science Society of America.

The symposium focused on ecological management of over-grazed areas. "As a basis for management decisions each of the ecosystems must be understood in terms of seasonal growth cycles, production, potential, functional characteristics, environmental restraints, and overall benefits derived from proper management," page 16.

Gomm, F.M. FORAGE SPECIES FOR THE INTERMOUNTAIN REGION; A SUMMARY OF FEEDING TRIALS. Technical Bulletin no. 1479. Washington, D.C.: U.S. Department of Agriculture, in cooperation with the Montana Agriculture Experiment Station, 1974. 307 p. Illus., tables, maps, reading list.

Presents results of research conducted since 1963 on different range-lands in an effort to preserve the data for future research bases. Data from the tests are filed with Arid Pasture and Range Investigation, Montana Agriculture Experiment Station.

"Forage Species," pp. 297-306, gives botanical and common names.

Guenther, H.R.; Hackett, E.I.; and Jensen, E.H. MEADOW IMPROVEMENT. Publication C154. Reno: University of Nevada, College of Agriculture, Cooperative Extension Service, 1974. 7 p. Illus.

Report on replicated plots to determine irrigation and fertilizer response on various types of forage crops for improvement of meadows in Nevada.

HANDBOOK OF OFFICIAL HAY AND STRAW STANDARDS. Rev. ed. Washington, D.C.: U.S. Department of Agriculture, 1958. 55 p.

Gives information on hay and straw by types. Importance of time of cutting hay, pages 53-54; importance of good baling, page 55.

Hanson, C.H., ed. ALFALFA SCIENCE AND TECHNOLOGY. Madison, Wis.: American Society of Agronomy, 1972. 812 p. Illus. (part color).

Comprehensive study of the "Queen of the Forages," alfalfa, the "only forage known to have been cultivated before the era of recorded history."

Covers world distribution and highlights use in the United States. Includes discussion of breeding for disease and insect resistance, and for feeding value.

Chapter 26: "Equipment for Harvesting, Storing, Feeding," pp. 575-99, includes cutting schedules for an established stand.

Harlan, Jack R. THEORY AND DYNAMICS OF GRASSLAND AGRICULTURE. Princeton, N.J.: Van Nostrand Reinhold Co., 1956. 281 p. Illus.

Differentiates between "pasture" and "range" in the United States.

Chapter 11: "Theory of Range Management," pp. 216-40, describes development of natural grasslands as a result of ecological trends.

Chapter 12: "Theory of Pasture Management," pp. 240-63, describes practice of establishing domestic forage plants on fields for temporary or permanent pasture.

Heady, Harold F. RANGELAND MANAGEMENT. New York: McGraw-Hill Book Co., [1975]. xi, 460 p. Illus., chapter biblios.

The aim of the book is to analyze rangeland management systems. Heady is an experienced teacher of the subject, and has visited developed ranges in twenty countries. He divides his discussion into three parts: use of the range by animals--wild as well as domestic; management of the grazing animals; and direct manipulation of range vegetation.

The text is enriched with illustrations and instructive tables and diagrams. For example: Figure 1-2: "Model of a Rangeland Ecosystem, p. 7; Figure 1-3: "Vegetation Influences Range Animals, and Animals Influence the Range Through a Number of Interacting Grazing Factors," p. 10.

Chapter on "Management of Seasonal Grazing" has diagrams, pp. 210-12, showing plans for rotation of grazing.

In the chapter on "Modification of Vegetation," p. 242, "One of the range manager's goals, as a practicing ecologist, is to combine the ecology of nature with the ecology of man. . . . His second goal is to help society gain high production within an unimpaired environment for humanity."

Chapter 21: "Putting Rangeland Management to Practice," pp. 414-19, includes ten points to be considered for more effective range management.

Heath, Maurice E.; Metcalfe, Darrel S.; and Barnes, Robert E. FORAGES: THE SCIENCE OF GRASSLAND AGRICULTURE. Ames: Iowa State University Press, 1973. xiv, 755 p. Illus., maps, diags., glossary.

Forage crops of importance in the United States are described, with reference to origins, history, adaptation, improvement, characteristics, varieties, strains, utilization, stand establishment, seedbed preparation, place in crop rotation.

Hitchcock, A.S. MANUAL OF GRASSES OF THE UNITED STATES. 2d ed., rev. by Agnes Chase. Washington, D.C.: U.S. Department of Agriculture, 1951. 1,051 p. Illus.

Describes food grasses, forage grasses (hay), pasture and range grasses, soil holding, and grasses used for silage.

Hyder, D.N.; Bement, R.E.; Remmenga, E.E.; and Hervey, D.F. ECOLOGICAL RESPONSE OF NATIVE PLANTS AND GUIDELINES FOR MANAGEMENT OF SHORTGRASS RANGE. Technical Bulletin no. 1503. Washington, D.C.: U.S. Department of Agriculture, in cooperation with Colorado State University, 1975. 87 p. Illus., diags.

"A major goal of the study was to determine whether certain combinations of treatments could be used to manipulate the frequencies of species for improvement of range condition."

Kipps, Michael Smith. PRODUCTION OF FIELD CROPS; A TEXTBOOK OF AGRONOMY. 6th ed. New York: McGraw-Hill Book Co., 1970. x, 790 p. Illus.

Part 3: "Forage Crops," includes chapters on grassland farming, pasture and meadow management, and so forth.

Harvesting and utilization of forage crops for feed are in chapter 27: "Haymaking," pp. 553-84, and chapter 29: "Silage," pp. 622-38.

Chapter 30: "Alfalfa," pp. 639-54, is described as the most popular forage crop in the United States.

Laycock, W.A. RANGELAND REFERENCE AREAS. Range Science Series no. 3. Denver, Colo.: Society for Range Management, 1975. vi, 66 p. Reading list.

Reviews published literature on rangeland areas, summarizes current programs in the United States and Canada, with activities in other countries. Intended as an information source for those interested in preserving rangeland.



Chapter 3: "Categories of Rangeland Reference Areas," pp. 11-19, discusses reference areas in terms of research natural areas, enclosures, managed range study areas, and other reference areas.

Mays, D.A., ed. FORAGE FERTILIZATION. Madison, Wis.: American Society of Agronomy, 1974. 636 p.

A compilation of papers presented at a symposium held 19-21 July 1972, Muscle Shoals, Alabama.

Papers concentrate on fertilization as a key management factor in development of a forage system.

Semple, A.T. GRASSLAND IMPROVEMENT. Cleveland, Ohio: CRC Press, [1970]. 422 p. Illus., tables, reading list, author and subject indexes.

The author emphasizes need to improve grasslands to help meet future needs for food from animal sources.

Describes kinds and geographic areas of grasslands, the components of plant life, nutritive properties and defects of pasturage. Includes grazing in arid and semi-arid lands, and pasture management in humid areas.

Management of water resources, irrigation, use of wetlands and grazing livestock are covered.

Spedding, Colin R. W., and Diekmahns, E.C., eds. GRASSES AND LEGUMES IN BRITISH AGRICULTURE. Bulletin no. 49. [Farnham Oaks, Bucks.]: Commonwealth Agricultural Bureaux, 1972. 584 p. Illus., diags., chapter bibliographies, subject index.

Objective of this book is to collect and present research findings concerning the important crop grasses and legumes in British agriculture, with introduction covering their cultivation.

Part 2: "The Grasses," pp. 39-279.

Part 3: "The Legumes," pp. 281-422.

Chapters 44, 45, and 46 compare the value of various herbage species for milk production and for beef and sheep production.

Voisin, Andre. GRASS TETANY. Translated by Catherine T.M. Herriott. London: Crosby Lockwood Staples, 1963. 262 p. Tables.

Cattle which have been on a diet of hay, and are then turned out on rapidly growing pasture that has been altered by incorrect fertilizer use, may develop grass tetany. The disorder develops due to a decrease in magnesium intake.

The author offers practical methods of protection against grass tetany.

Voisin, Andre, and Lecante, A. A RATIONAL GRAZING; THE MEETING OF GRASS AND COW; A MANUAL OF GRASS PRODUCTIVITY. London: Crosby Lockwood Staples, [1962]. 85 p. Illus.

A synthesis of A. Voisin's GRASS PRODUCTIVITY on management of grazed grass. Voisin, chemist-biologist and practical farmer, and Lecante, a veterinary surgeon, suggest that grass is made for the cow, not the cow for the grass, and urge a rational plan for grazing. They offer ten basic rules for the manager.

Stephen Williams contributes a chapter on "Economical Fencing," pages 79-85, as a means of managing grazing areas.

Wyatt, C.E.; Murdock, L.W.; and Thompson, W.C. DOUBLE CROPPING LAND FOR SILAGE PROTECTION. AGR-17. Lexington: University of Kentucky, Department of Agronomy, 1972. 2 p.

With the expansion of livestock enterprises, there is limited land available for silage crops. Gives soil and fertility requirements for double cropping and suggests crop combinations such as corn and grain sorghum.



## Chapter 5

### WEEDS, INSECTS, CONTROL OF PESTS

#### WEEDS

Holloway, J.K. "Projects in Biological Control of Weeds." In BIOLOGICAL CONTROL OF INSECTS, PESTS, AND WEEDS, edited by Paul DeBach, pp. 650-70. London: Chapman and Hall, 1973.

Huffaker, C.B. "Fundamentals of Biological Weed Control." In BIOLOGICAL CONTROL OF INSECTS, PESTS AND WEEDS, edited by Paul DeBach, pp. 631-49. London: Chapman and Hall, 1973.

Iseley, Duane. WEED IDENTIFICATION AND CONTROL IN THE NORTH CENTRAL STATES. 2d ed. Ames: Iowa State University Press, 1960. viii, 400 p. Illus., pls., reading list.

Designed to aid in identification of common, unknown, and poisonous weeds. Gives family characteristics of weeds, their growth behavior, and relation to specific crops. Weed control by crop --corn, soybeans--is discussed.

Chapter 2: "Weed and Agricultural Laws," pp. 6-8.

King, Lawrence J. WEEDS OF THE WORLD; BIOLOGY AND CONTROL. New York: Wiley-Interscience, 1966. 558 p. Illus., chapter biblios., author and subject indexes.

Introduces weeds, their history, biological characteristics, growth, reproduction, and seeding behavior. Weeds which have injurious interactions with crops are discussed on pages 243-59.

Control of weeds by nonchemical methods is covered in chapter 15, pages 502-37. Other chapters discuss herbicides and their uses in weed control.

Kingsbury, John M. POISONOUS PLANTS OF THE UNITED STATES AND CANADA. Englewood Cliffs, N.J.: Prentice-Hall, [1964]. 639 p. Illus., diags., reading list.

This book is about plants known to have caused poisoning, and some not yet known to cause poisoning in North America.

Each major plant is identified by scientific name, common name(s), description, distribution, and habitat. The poisonous principles, toxicity, symptoms, lesions, and conditions of poisoning are outlined.

The book is particularly useful for the veterinarian or stockman.

Muzik, T.J. WEED BIOLOGY AND CONTROL. New York: McGraw-Hill Book Co., [1970]. xi, 273 p. Illus., tables, glossary, author and subject indexes.

Aimed at those who wish to understand the control of plant growth. Chapters discuss weeds in relation to man, weed distribution--life cycle, propagation, dormancy, dispersal.

Chemical and biological control methods are described. Table: "Properties and Uses of Herbicides," pp. 232-56.

Reed, Clyde F. SELECTED WEEDS IN THE UNITED STATES. Agricultural Handbook no. 366. Washington, D.C.: U.S. Department of Agriculture, 1970. 463 p. Illus., maps. Drawings by Regina O. Hughes.

Pictures and describes 224 weeds, selected by weed scientists from a complete list of 1,775 weeds listed by Weed Science Society of America in WEEDS 14 (1966): 347-86. Weeds included in this handbook are those prevalent in croplands, grazing ranges, and noncrop and aquatic sites. Scientific name and common names are given.

## INSECTS

Barker, Will. FAMILIAR INSECTS OF AMERICA. Foreword by Hilary J. Deason. New York: Harper & Row, Publishers, [1960]. 254 p. Glossary, reading list. Illustrated by Carl Burger. Schematic drawings by Nancy Lloyd.

A book for the nonspecialist. Chapters include grasshoppers and beetles.

Burges, H.D., and Hussey, N.W., eds. MICROBIAL CONTROL OF INSECTS AND MITES. New York: Academic Press, 1971. 883 p. Illus., chapter biblios., subject index.

Contributions from forty-one authors and practicing specialists from eleven countries. Assesses current knowledge, achievements, and prospects for future control by pesticides.

Appendix 3: "Information Sources and Literature Searching on Biological Control," pp. 717-20, by J.R. Norris.

Appendix 4: "World Teaching Facilities in Insect Pathology, by Country," pp. 725-32.

Subject index by I.K. Travis and S.F. Vahrman.

Burton, John. THE OXFORD BOOK OF INSECTS. [London]: Oxford University Press, 1968. viii, 208 p. Colored illustrations by Joyce Bee, Derek Whiteby, and Peter Parks.

A selection of 780 insects from more than 20,000 species existing in Britain.

Carter, Walter. INSECTS IN RELATION TO PLANT DISEASE. 2d ed. New York: Wiley-Interscience, 1973. 773 p. Illus.

This textbook for graduate students can be used as a reference book in problems on transmission of plant diseases by insects.

Information on the insect transmission of phytopathogenic bacteria. Virus transmissions section is updated in this edition. Emphasizes unusual situations.

Chapman, R.F. THE INSECTS: STRUCTURE AND FUNCTION. New York: American Elsevier Publishing Co., [1971]. 831 p. Reading list, taxonomic and subject indexes.

Section A, 2: "Feeding--Feeding Habits," describes food preferences, fungus-growing insects, and so forth.

DESERT LOCUST PROJECT. Rome: Food and Agriculture Organization of the United Nations, 1968. 154 p. Illus., maps (foldout).

The project operated in the period 1960-66 and generated seventy-five documents covering ecological survey, research, reporting, forecasting, training. This is a report of the project.

Danilevskii, A.S. PHOTOPERIODISM AND SEASONAL DEVELOPMENT OF INSECTS. Translated by J. Johnston, with editorial assistance from N. Waloff. Edinburgh: Oliver & Boyd, [1965]. 283 p. Illus., reading lists, plant and insect indexes.

Discusses effects of seasonal day length on insect population and distribution. Only the ecological aspects are covered. Based on investigative work in the entomological laboratories of the University of Leningrad.

Appendix, pp. 247-55, has list of species of insects and mites whose reaction to day length has been investigated.

Davidson, R.E., and Pears, L.M. INSECTS, PESTS OF FARM, GARDEN AND ORCHARD. 6th ed. New York: John Wiley & Sons, [1966]. 675 p. Illus., chapter biblios.

A useful reference for those working in agriculture.

Chapter 8: "Insects Injurious to Various Crops," pp. 129-57.  
Discusses grasshoppers, locusts, crickets, May beetles, wireworms, amychworms, cutworms, borers, moths.

Chapter 23: "Insects Injurious to Man and Domestic Animals," pp. 593-648.

There is discussion of insect control--natural, chemical, mechanical, cultural, biological, and legislative.

DeBach, Paul, ed., assisted by Schlinger, I. BIOLOGICAL CONTROL OF INSECTS, PESTS AND WEEDS. London: Chapman & Hall, 1973. 868 p. Illus., reading list, scientific name index.

This book was planned thirty years ago; its outline and writers were chosen by a committee.

Table 12: "Cases of Biological Control of Insects by Important Entomophagous Insects," pp. 676-89, in chapter 24: "Successes, Trends, and Future Possibilities," by Paul DeBach.

DeOng, E.R.; Bishop, D.; and Bishop, J.L., Jr. INSECT, DISEASE AND WEED CONTROL. New York: Chemical Publishing Co., 1972. 370 p. Illus., chapter biblios.

For users of agricultural chemicals, "The Establishment of a Pest Control Program and use of Pesticides," pp. 7-10.

Chapter 6: "Insects and Diseases of Field Crops," pp. 154-98.

Chapter 11: "Pests of Barns and Livestock," pp. 317-33.

Each chapter gives dosage, agent, measurement, control and instructions for use.

Esau, Katherine. PLANTS, VIRUSES, AND INSECTS. Cambridge, Mass.: Harvard University Press, 1961. 113 p. Illus.

Emphasis is on the plant tissue and its degeneration by insects and viruses.

Frolich, G., and Rodewald, W. PESTS AND DISEASES OF TROPICAL CROPS AND THEIR CONTROL. Translated by H. Liebscher and F. Kroehler. Edited by the German-African Society, Berlin. Oxford: Pergamon Press, [1970]. ix, 371 p. Illus. (part color), index of causal agents.

Compiled in order to bring together a synopsis of technical and scientific literature as a basis for further investigation. Focuses on crop protection.

Sections on "Disease and Pests of Food Crops and Their Control" include "Rice," pp. 141-53; "Maize," pp. 155-65; and "Sugar Cane," pp. 229-41.



Pests of stored food and their control are discussed and illustrated, pages 314-37.

"Tolerance of Agricultural Products in the Use of Plant Protection and Pest Control Products," pp. 341-42.

Hewitt, George B., et al. RANGELAND ENTOMOLOGY. Denver, Colo.: Society for Range Management, [1974]. viii, 127 p. Illus., chapter biblios., glossary. Paperbound.

Covers developments and habits of chewing, sucking, native parasitic, and predator insects affecting grasses and forbs. Also insects affecting rangeland shrubs and succulents.

Discusses good management practices in controlling insects--burning, cultural control, biological control. Insecticidal control is covered in chapter 10, pp. 118-22.

Lanham, Uri. THE INSECTS. New York: Columbia University Press, [1967]. 292 p. Reading list. Paperbound. Illustrated with line drawings by Caroline Lanham; photographs by the author.

Chapter 9: "Insects and Plants," pp. 107-15.

Chapter 11: "Insects vs. Insects," pp. 120-25.

Part 4 has eight chapters about types of insects--winged, wingless, beetles, and so forth.

Metcalf, C.L., and Flint, W.P. DESTRUCTIVE AND USEFUL INSECTS: THEIR HABITS AND CONTROL. 4th ed. New York: McGraw-Hill Book Co., 1966. 1,087 p. Illus., tables.

A reference guide for farmers, gardeners, fruit growers, and others seeking information on insects.

Chapter 2: "The Value of Insects to Man," pp. 44-75, includes a list: "The Ways in Which Insects are Beneficial or Useful to Man," pp. 45-46. Insects as pollinators are covered on pages 56-61.

Chapter 7: "Insect Control," pp. 314-426, covers applied control by insecticides; by farm practices--rotation, cultivation; biological control; natural control--climate, topographic.

Chapters 9 through 11: "Insects Injurious to [Crops]," pp. 462-576, covers corn, wheat, other small grains, and legumes.

Staneck, V.J. THE PICTORIAL ENCYCLOPEDIA OF INSECTS. London: Hamlyn Publishing Group, [1969]. 543 p. 1,000 photos (b & w, color), species index.

English translation of work published in Prague. Author is former director of Prague Zoological Gardens.

Introduction briefly surveys the classification of insects.

Swain, R.B. THE INSECT GUIDE; ORDERS AND FAMILIES OF NORTH AMERICAN INSECTS. Illustrated by Su Zan Swain. Garden City, N.Y.: Doubleday & Co., 1957. 261 p. Illus. (part color).

End papers picture insect orders for quick reference. Instructions on use given with aids to pronunciation of scientific names.

Swan, L.A. BENEFICIAL INSECTS; NATURE'S ALTERNATIVE TO CHEMICAL INSECTICIDES: ANIMAL PREDATORS, PARASITISM, DISEASE ORGANISMS. New York: Harper & Row, Publishers, [1964]. 446 p. Illus., glossary.

Covers biological control by use of parasites, predators, and diseases against insect pests.

Trought, T.E.T. FARM PESTS; AN AID TO THEIR RECOGNITION. Foreword by J.L. Hunt. Oxford: Blackwell Scientific Publications, [1965]. 32 p. Illus., color pls. reproduced from watercolors by Doris R. Thompson.

Useful reference for the farmer. Illustrates states of development, with notes on life history of thirty-one insect pests.

### CONTROL OF PESTS

Blake, Helen T., and Andrienas, Paul A. FARMERS' USE OF PESTICIDES IN 1971 . . . EXPENDITURES. Agricultural Economic Report no. 296. Washington, D.C.: U.S. Department of Agriculture, 1975. iv, 42 p. Illus., maps, diags.

Based on interviews with 800 farmers in 394 countries throughout forty-eight states and Hawaii. Tables show, by region, pesticide use for livestock, specific crops, and other purposes.

British Crop Protection Council. INSECTICIDES AND FUNGICIDES; HANDBOOK FOR CROP PROTECTION. 4th ed. Edited by Hubert Martin. Oxford: Blackwell Scientific Publications, [1972]. 415 p. Illus., scientific name index.

Handbook for the grower and agricultural advisor. The first five chapters give biological background of plant pests, chemical background, application, and efficient use of pesticides.

Chapters 5 through 11 cover the control of pests and diseases in individual crops--cereals, root crops, forages, fruit, vegetables, glasshouse crops.

Culpin, Claude. PROFITABLE FARM MECHANIZATION. 2d ed. London: Crosby Lockwood Staples, [1968]. 344 p. Illus.

"Field Crop Spraying," p. 142, discusses costs of machine spraying and advantages of contract spraying. Contractor has expertise and equipment for crops that would be damaged by a farm-operated tractor.

Ennis, W.B., Jr., and McClellan, W.D. "Chemicals in Crop Production." In FARMERS' WORLD, THE YEARBOOK OF AGRICULTURE, pp. 106-12. Washington, D.C.: U.S. Department of Agriculture, 1964.

FARMERS' USE OF PESTICIDES IN 1971; EXTENT OF CROP USE. Agricultural Economic Report no. 268. Washington, D.C.: U.S. Department of Agriculture, [1974]. 25 p. Illus., tables.

The second of several reports to be published on farm use of pesticides. The third is tentatively planned for 1977.

Agricultural Economic Report no. 258, dated July 1974, is titled FARMERS' USE OF PESTICIDES IN 1971: QUANTITIES USED.

Feakin, Susan D., ed. PEST CONTROL IN GROUNDNUTS. 3d ed. London: Centre for Overseas Pest Research, Foreign and Commonwealth Office, Overseas Development Administration, 1973. 197 p. Illus.

Checklist of pests by scientific name, synonym, common name, imperfect statement, or misrepresentation. Also, checklist of diseases caused by insects.

"The Aflatoxin Problem" pp. 177-80, covers one of the problems in storage of groundnuts (known as peanuts in the United States).

Hall, Stanley C. "The Place of Insecticides." In FARMERS' WORLD, THE YEARBOOK OF AGRICULTURE 1964," pp. 113-17. Washington, D.C.: U.S. Department of Agriculture, 1964.

HERBICIDE HANDBOOK OF THE WEED SOCIETY OF AMERICA. Geneva, N.Y.: W.F. Humphrey Press, 1967. 309 p. Index of common names, trade names, and code numbers, paperbound.

The second edition, 1970, was not available for examination.

Data on herbicides and desiccants, arranged alphabetically by chemical name, pp. 1-287. Information on use kept at a minimum.

Planned for update every three to four years.

Jacobson, Martin. INSECTICIDES FROM PLANTS; A REVIEW OF THE LITERATURE, 1954-1971. Agricultural Handbook no. 461. Washington, D.C.: U.S. Department of Agriculture, 1975. 138 p. Reading list.

Plants are grouped by families, with 1,485 species represented.

This handbook extends the literature review of Handbook no. 154, which covered the period 1941-1953.

Jacobson, Martin, and Crosby, D.G., eds. NATURALLY OCCURRING INSECTICIDES. New York: Marcel Dekker, 1971. 597 p. Illus., tables. Author and subject indexes.

Intended as a reference book on properties of natural insecticides, many of which are toxic to animals.

Botanical insecticides are discussed in part 1; insect-derived insecticides in part 2; bacterial and fungal insecticides in part 3.

Jenkins, Theodore, et al. FARMERS' EXPENDITURES FOR CUSTOM PESTICIDE SERVICE, 1971. Agricultural Economic Report no. 314. Washington, D.C.: U.S. Department of Agriculture, 1975. iv, 31 p.

One of a series of reports based on a sample survey early in 1972 to measure pesticide use by farmers in 1971.

Kilgore, W.W., and Douth, R.L. PEST CONTROL: BIOLOGICAL, PHYSICAL AND SELECTED CHEMICAL METHODS. New York: Academic Press, 1967. 489 p. Author and subject indexes.

An interdisciplinary approach, by sixteen specialists, to the advances made in pest control.

Part 1: "Insect Pests," covers such methods of pest control as microbial pesticides, electromagnetic energy radiation, induced sterilization, pheromones, repellants, antifeedants.

Part 2: "Vertebrate Pests," reviews control methods including biocontrol, chemosterilants, behavior manipulation--visual, mechanical, and acoustical.

National Research Council. Agricultural Board. PRINCIPLES OF PLANT AND ANIMAL PEST CONTROL. 6 vols. Washington, D.C.: National Academy of Sciences, 1968-70.

Volume 1: PLANT DISEASE DEVELOPMENT AND CONTROL. 1968. 221 p.

Volume 2: WEED CONTROL. 1968. 494 p.

Volume 3: INSECT-PEST MANAGEMENT AND CONTROL. 1969. 525 p.

Volume 4: CONTROL OF PLANT-PARASITIC NEMATODES. 1968. 179 p.

Volume 5: VERTEBRATE PESTS: PROBLEMS AND CONTROL. 1970. x, 150 p.

Volume 6: EFFECTS OF PESTICIDES ON FRUIT AND VEGETABLE PHYSIOLOGY. 1968. x, 90 p.

Page, B.G., and Thomson, W.T. THE 1973 INSECTICIDE, HERBICIDE, FUNGICIDE QUICK GUIDE. Indianapolis, Ind.: Thomson Publications, 1973. Unpaged. Loose-leaf.

Sectional arrangement. Chemicals listed by section, alphabetically for each crop.

## Chapter 6

### REFERENCE MATERIALS RELATED TO PART 2

#### ABSTRACT JOURNALS

FERTILIZER ABSTRACTS. Muscle Shoals, Ala.: Tennessee Valley Authority, National Fertilizer Development Center, Fertilizer Abstracts Service, 1962-- . Monthly.

Includes annotated references to articles, reports, and patents on technology, marketing, and use of fertilizer.

FIELD CROP ABSTRACTS. Farnham Royal, England: Commonwealth Agricultural Bureaux, Commonwealth Bureau of Pastures and Field Crops, 1948-- . Monthly.

Compiled from current world literature on annual field crops, temperate and tropical. Author, subject, and annual indexes.

HERBAGE ABSTRACTS. Farnham Royal, England: Commonwealth Agricultural Bureaux, Commonwealth Bureau of Pastures and Field Crops, 1931-- . Monthly.

Current world scientific literature on sown and natural grasslands, pasture plants, and fodder crops.

IRRIGATION AND DRAINAGE ABSTRACTS. New York, N.Y.: American Society of Civil Engineers. Monthly.

Covers water management, irrigation systems, crop protection and environmental aspects, drainage, soil water management, plant-water relationships, by plant. Also includes salinity and toxicity problems; and meteorological references.

The American Society of Civil Engineers publishes the JOURNAL OF THE IRRIGATION AND DRAINAGE DIVISION. All papers in this journal are abstracted. These abstracts also appear in the bi-monthly ASCE PUBLICATIONS ABSTRACTS, and also appear in ASCE TRANSACTION together with references about discussions, errata, and closures.

## Reference Materials

---

MICROBIOLOGY ABSTRACTS (Sections related to this volume). London: Information Retrieval Ltd.

Section A: INDUSTRIAL AND APPLIED MICROBIOLOGY ABSTRACTS. 1965-- . Monthly.

Abstracts 3,400 primary journals. Covers plant diseases, plant protection, soil microorganisms, and so forth.

Section B: BACTERIOLOGY ABSTRACTS. 1966-- . Monthly.

Averages 950 abstracts each issue. Species index, author index. Book notices.

Section C: ALGOLOGY, MYCOLOGY, PROTOZOOLOGY ABSTRACTS. 1966-- . Monthly.

Averages 650 abstracts per issue. Covers plant fungi, ecology, viruses, bacteria and microorganisms, and so forth.

SOILS AND FERTILIZERS. Farnham Royal, England: Commonwealth Agricultural Bureaux, Commonwealth Bureau of Soils, 1938-- . Monthly.

This abstract journal covers land surveys, reclamation, erosion, climate, cultivation, fertilizers, and so forth.

WEED ABSTRACTS. Farnham Royal, England: Commonwealth Agricultural Bureaux, Agricultural Research Council, Weed Research Organization, 1954-- . Monthly.

Abstracts current literature on weeds, weed control, and allied subjects.

WHEAT ABSTRACTS. Lincoln: Nebraska Agricultural Experiment Station, 1962-- . Monthly.

Research literature on wheat, currently received in the University of Nebraska, College of Agriculture, including coverage of Department of Agriculture and state experiment station periodicals.

## BIBLIOGRAPHIES

Barton, Lela V., comp., ed. BIBLIOGRAPHY OF SEEDS. New York: Columbia University Press, 1967. 858 p. Plant and subject indexes.

Prepared from the existing file of some 30,000 citations at Boyce Thompson Institute, Yonkers, New York. New citations from the literature up to 1 June 1964 were reviewed. Selections made from 20,163 references.

Worldwide coverage of seed research, seed technology, and agricultural practices. Entries numbered. Indexes refer to references by number.

BIBLIOGRAPHY OF SOIL SCIENCE, FERTILIZERS AND GENERAL AGRONOMY 1959-1962. Harpenden, England: Commonwealth Agricultural Bureaux, 1935-- .

A subject bibliography, classified by Universal Decimal Classification, with index to classification numbers.

Beginning with the ninth volume, 1956/59, a new classification system began for the main subjects: soil, crop production, including cultivation, fertilizers, plant protection, soil reclamation, and conservation, agricultural crops, tree crops, including fruits and forests, horticultural crops.

A capital letter in brackets indicates the language of the item cited.

Cheek, Emory, comp. LIST OF THESES AND DISSERTATIONS ON PEANUTS AND PEANUT-RELATED RESEARCH. Research Report 54. Tifton: Coastal Plain Station, University of Georgia College of Agriculture Experiment Station, 1969. 38 p. Subject index.

Report cites 234 theses and dissertations. Research Report 107, 1971, 20 pages, lists 97 references since 1969.

Research Report 164, 1973, 20 pages, adds 83 new titles to the first two reports.

Reports compiled under a grant from Georgia Agricultural Commodity Commission for Peanuts.

Edwards, D.I., and Epps, J.M. ANNOTATED BIBLIOGRAPHY OF NEMATODES OF SOYBEANS, 1969-73. ARS-NC-24. Washington, D.C.: U.S. Department of Agriculture, 1975. 16 p. Author index.

This bibliography includes 380 references and continues the ARS-S-8, 1973, seventy-five-page bibliography which covered the period 1882-1968.

"Genera and Species" Appendix by Numerical References, p. 15.

George Washington University. Biological Sciences Communication Project. INTERNATIONAL BIBLIOGRAPHY OF RICE RESEARCH. Metuchen, N.J.: Scarecrow Press, 1963. 881 p.

\_\_\_\_\_. THE MILLETS; A BIBLIOGRAPHY OF THE WORLD LITERATURE COVERING THE YEARS 1930-1963. Metuchen, N.J.: Scarecrow Press, 1967. 154 p. Author, geographic, and subject indexes, language abbreviation list.

Covers all aspects of millet--the plant, its production, protection from insect pests, and products. Many references have brief annotations.

\_\_\_\_\_. SORGHUM; A BIBLIOGRAPHY OF THE WORLD LITERATURE COVERING THE YEARS 1930-63. Metuchen, N.J.: Scarecrow Press, 1967. 330 p.

\_\_\_\_\_. Supplement. 1964-69. 1973. vii, 393 p.



## Reference Materials

---

International Maize and Wheat Improvement Center, Mexico. BIBLIOGRAPHY OF CORN. 3 vols. Metuchen, N.J.: Scarecrow Press, 1971. 1,887 p. Author and subject indexes.

Worldwide coverage of the literature of corn, its production practices and problems, including disease and pest control. Corn as a product, its many uses, and its economic and social aspects are included.

\_\_\_\_\_. BIBLIOGRAPHY OF WHEAT. 3 vols. Metuchen, N.J.: Scarecrow Press, 1971. 2,239 p. Author, subject, and geographic indexes.

Worldwide literature covering wheat, the plant, its growth, problems and practices in production; control of disease and pests; wheat as a product and its utilization, with economic and social aspects.

Paylore, Patricia. ARID LANDS RESEARCH INSTITUTIONS: A WORLD DIRECTORY. DA-49-092-AR O-71. Tucson: University of Arizona Press, 1967. 268 p.

\_\_\_\_\_. First supplement, 1968. Army Natick Laboratories Technical Report 69-23-ES. Natick, Mass.: Earth Sciences Laboratory, 1968. 38 p.

Ross, L.W., and Kyle, R.J. BIBLIOGRAPHY ON THE TECHNOLOGY OF PEANUT PRODUCTION 1957-1961. Special Report no. 37. Atlanta: Georgia Institute of Technology, Engineering Experiment Station, 1962. 256 p.

Brings together 2,400 references on peanuts from published bibliographies, indexes, and reports. Many entries are annotated.

An index to an earlier report covering the period 1895-1956 is included.

Adds material indexed in AGRICULTURAL INDEX 1933-56; BIBLIOGRAPHY OF AGRICULTURE, 1943-56; EXPERIMENT STATION RECORD, 1896-1946; BIBLIOGRAPHY OF PEANUTS, compiled by N. de Bilderling, 1954.

Shalit, Michael, comp. GUIDE TO THE LITERATURE OF THE SUGAR INDUSTRY. Amsterdam: Elsevier Publishing Co., 1970. 172 p.

Entries are cited for ten different kinds of publications on a world-wide coverage. Abstracts, bibliographies, government publications, dictionaries, periodicals, publications of organizations, handbooks, publications on sugar economics, agriculture and agronomy, history and biography.

Wang, Jen Yu, and Barger, Gerald L., eds. and comps. BIBLIOGRAPHY OF AGRICULTURAL METEOROLOGY. Madison: University of Wisconsin Press, 1962. xi, 673 p. Author and subject indexes.

Prepared for the guidance of all who work in or advise on agricultural production.

Topics include radiation, temperature, moisture, wind, smog, forest fires, and freeze damage. Relation of weather to agricultural management covers plant diseases and pests, environmental control of livestock, and agrometeorological forecasting.

There is a user's guide. References are numbered and are accessible through indexes. Citations are not annotated.

## ANNUALS AND YEARBOOKS

ADVANCES IN AGRONOMY. Madison, Wis.: American Society of Agronomy, 1949-- . Annual.

AMERICAN POTATO YEARBOOK. 1973 ed. Edited by Stanley E. Walker. Westfield, N.J.: C.S. Macfarland, Jr., 1924-- . 80 p. Annual. Soft cover.

Statistics and forecast; newsworthy information for the industry.

Onions also covered in this yearbook.

ANNUAL REVIEW OF ENTOMOLOGY. Edited by Ray F. Smith. Palo Alto, Calif.: Annual Reviews, 1950-- . Annual.

A cumulative index, included in this annual volume, covers contributing authors and chapter titles, volumes 11-20.

FARM CHEMICALS HANDBOOK. Willoughby, Ohio: Meister Publishing Co., 1964-- . Annual.

PESTICIDE LABEL BOOK. San Ramon, Calif.: Shell Chemical Co., 1975-- . Annual. Label and agricultural use indexes.

The 1975 Label Book replaces the 1974 edition and all prior editions of the SHELL PESTICIDE DIRECTORY. Intended as a guide to currently registered uses for Shell agricultural chemicals.

RICE BREEDING. Manila, Philippines: International Rice Research Institute, [1972]. xi, 740 p.

Reports advances in rice breeding, current breeding programs for higher protein quality, disease and insect resistance, and so forth. Outlook for higher yield potential. Summary of review in conclusion of the book.

SEEDS, THE YEARBOOK OF AGRICULTURE. Washington, D.C.: U.S. Department of Agriculture, 1961. 604 p. Illus., reading list, glossary.

Contributions written by research scientists, seedsmen, plant breeders, and farm managers.

Topics cover the importance of seeds, their life processes, production, processing, certification, testing, and marketing.

## Reference Materials

---

"Some Characteristics of Seeds of a Selected List of Cultivated Plants," pp. 544-46.

"Some Characteristics of Seeds of Species Used as Rootstock for Tree Fruits and Nuts," pp. 550-51.

WEED CONTROL MANUAL AND HERBICIDE GUIDE. Willoughby, Ohio: Meister Publishing Co., 1976-- . Annual.

Guide for preliminary planning when considering use of herbicides. Emphasizes importance of reading the label.

Crops, field, vegetable and fruit, rangeland, permanent pastures, and so forth, tabulated with the recommended product for weed control.

The first edition, "Handy Guide to Weed Control," was published in the March 1962 issue of COUNTY AGENT & VO-AG TEACHER. The magazine had gone through several name changes--from FARM TECHNOLOGY to AGRI-FIELDMAN AND CONSULTANT. Each year "Weed Control Manual" had increased in size and in December 1975 the 1976 edition was published as a separate publication.

## REFERENCE BOOKS

Bottle, R.T., and Wyatt, H.V., eds. THE USE OF BIOLOGICAL LITERATURE. 2d ed. Hamden, Conn.: Archon Books, [1971]. 391 p.

Chapter 17: "The Literature of Food and Agriculture," pp. 298-308, by R.T. Bottle, includes a section on legal matters.

Gerth van Wijk, H.L. A DICTIONARY OF PLANT NAMES. 2 vols. The Hague: A. Asher and Dutch Society Sciences at Haarlem, 1911-1916. Reprint. New York: Hafner Services, 1971.

THE DICTIONARY, vol. 1, 1,444 p.

THE INDEX, vol. 2, 1,696 p. This volume has an introduction by F.A. Stafius.

The dictionary is published in four modern languages: English, French, German, Dutch.

Gojmerac, W.L., and Koval, C.F. INSECTICIDE DICTIONARY; A CONSOLIDATED LIST INDEXED BY APPROVED COMMON (GENERIC) AND TRADE NAMES. Publication A 1974. Rev. ed. Madison: University of Wisconsin Cooperative Extension Program, 1974. 7 p.

Insecticides are entered by approved common name, with chemical definition, trade name or other designation. Useful, compact dictionary.

INDEX OF PLANT DISEASES IN THE UNITED STATES: PLANT PESTS OF IMPORTANCE TO NORTH AMERICAN AGRICULTURE. Agricultural Handbook

no. 165. Washington, D.C.: U.S. Department of Agriculture, Agricultural Research Service, Crop Reporting Division, 1960. 531 p. Maps.

This handbook condensed, with slight revisions, the six-part edition published from 1950 to 1953.

An explanation of nomenclature is on page 2; of geographic distribution and geographic regions, page 3.

The "Index of Plant Diseases," pp. 4-485, is alphabetically arranged according to scientific names of host plants, host genera, disease organism.

The "Host Index," pp. 486-516, has scientific names, families, and genera. The family names are in capital letters; lower case letters are used for genera. Synonyms are in parentheses.

List of authors of plant-parasite names, with some biographic data are on page 517.

Dr. R.T. Hanlin, professor of Plant Pathology, University of Georgia Agricultural College Experiment Station, Athens, has undertaken a revision of this index. The first part of the study, covering diseases of corn, has been completed.

Plowden, Curshan Chicheley. A MANUAL OF PLANT NAMES. 2d ed., rev. London: George Allen & Unwin, 1970. 260 p. Illus.

Botanical terms, common and generic names of plants, the leaf, the plant system.

Index of plant families by division, including subdivisions.

Swartz, Delbert. COLLEGIATE DICTIONARY OF BOTANY. New York: Ronald Press Co., [1971]. iii, 520 p.

This work was completed by Sylvia G. Swartz after her husband's death.

Contains nearly 24,000 entries compiled from more than 170 sources. Few Latin names are included. No botanical terms found in general abridged dictionaries are used.

Appendix: "Outline of the Plant Kingdom," pp. 507-20.

Westcott, Cynthia. PLANT DISEASE HANDBOOK. 3d ed. New York: Van Nostrand Reinhold Co., [1971]. 858 p. Illus., reading list, glossary, host plant index.

This handbook is used as a dictionary, with Latin names and key-words in boldface type. Example given on page 463.

Lists garden chemicals and their application, classification of plant pathogens, host plants, and their diseases.

## Reference Materials

---

### PERIODICALS

Additional information on these periodicals can be found in part 7: Appendixes.

GRAIN BULLETIN. London: Commonwealth Secretariat, 1963-- . Monthly.

IRRIGATION AGE. Minneapolis, Minn.: Webb Publishing Co., 1966-- .  
Nine times a year.

Published for farmers and volume producers who are practicing irrigation. Regional editions for North Plains and South Plains.

PEANUT JOURNAL AND NUT WORLD. Suffolk, Va.: Peanut Journal Publishing Co., 1921-- . Monthly.

PEST CONTROL. Cleveland, Ohio: Harvest Publishing Co., 1933-- . Monthly.

RICE JOURNAL. Washington, D.C.: Rice Journal Enterprises, 1897-- .  
Monthly.

SEED WORLD. Chicago, Ill.: 1862-- . Monthly.

Carries Washington and Canadian news, research reports, new varieties announcements, calendar, meeting notices.

SOIL SCIENCE. Baltimore, Md.: Williams & Wilkins Co., 1916-- . Monthly.

### U.S. GOVERNMENT SERIAL PUBLICATIONS

AGRICULTURAL SCIENCE REVIEW. Washington, D.C.: U.S. Department of Agriculture, 1963-- . Quarterly.

CROP PRODUCTION. Washington, D.C.: U.S. Department of Agriculture, Crop Reporting Board. Monthly.

Estimates of acreage; yield and production; price and value data.  
Annual summary in January.

CROP VALUES. Washington, D.C.: U.S. Department of Agriculture, Crop Reporting Board. Annual.

Season average prices and value of product by state and use.  
January 1975 edition, 28 pages, covered 1973/74.

**FERTILIZER SITUATION.** Washington, D.C.: U.S. Department of Agriculture, Economic Research Service. Annual.

Covers estimated capacity to produce basic fertilizer materials, and looks at potential demand for the years ahead. Reviews foreign trade in basic fertilizer materials. Special reports on production, distribution, and use of fertilizer are included in each issue.

**FIELD SEED STOCKS.** Washington, D.C.: U.S. Department of Agriculture, Crop Reporting Board. Annual.

**OFFICIAL JOURNAL OF PLANT VARIETY PROTECTION OFFICE.** Washington, D.C.: U.S. Department of Agriculture. Quarterly.

General information on Plant Variety Protection Act, including instructions, application for plant breeders, and certificates of protection.

**PLANT DISEASE REPORTER.** Beltsville, Md.: U.S. Department of Agriculture, Agricultural Research Service, 1916-- . Monthly.

Published by Agricultural Research Service as a service to American agriculture. Reports new developments in plant pathology, including disease incidence, serious outbreaks, epidemics, investigative techniques, and control chemicals.

**RICE SITUATION.** Washington, D.C.: U.S. Department of Agriculture, Economic Research Service. Semiannual.

Situation in the world and the United States. Statistical tables.

**SEED CROPS.** Washington, D.C.: U.S. Department of Agriculture. Annual.

**SOYBEAN PRODUCTION MARKETING AND USE.** Muscle Shoals, Ala.: National Fertilizer Development Center. Annual.

The 1974 edition has 187 pages, illustrations, diagrams.

Prepared by the staff of the National Fertilizer Development Center. Gives trends in consumption of soy products, discusses production, harvesting, storage.

**WEEKLY WEATHER AND CROP BULLETIN.** Washington, D.C.: U.S. Department of Agriculture and U.S. Department of Commerce. Weekly.

Summarizes weather and its effect on crops and farm progress the previous week, by state. "U.S. Monthly Summaries" on world weather also provided.

**WHEAT SITUATION.** Washington, D.C.: U.S. Department of Agriculture, Economic Research Division. 1951-- . Quarterly.

Published February, May, August, November. Summary of current world wheat situation and outlook. Special articles; also includes section on rye situation.

### ORGANIZATIONS, ASSOCIATIONS, SOCIETIES, INSTITUTES

Addresses of public organizations listed below are given in part 7: Appendixes. Publications limited to members.

#### American Association of Peanut Research and Education

Publishes PEANUT RESEARCH. 1963-- . Bimonthly.

Issues include books, reports, selected references, dissertations, and theses in peanut research.

#### American Society of Agronomy (United States)

Publishes AGRONOMY JOURNAL. 1907-- . Bimonthly; AGRONOMY NEWS. 1956-- . Six issues a year; CROPS & SOILS MANAGEMENT. 1948-- . Nine issues a year; AGRONOMY ABSTRACTS. 1950-- . Annual. Author, five-year indexes.

#### American Society of Civil Engineers

Publishes JOURNAL OF THE IRRIGATION AND DRAINAGE DIVISION. Monthly; ASCE PUBLICATIONS ABSTRACTS. Bimonthly; ASCE TRANSACTIONS.

#### American Society of Plant Physiology

Publishes PLANT PHYSIOLOGY. 1926-- . Monthly.

#### American Soybean Association

Publishes SOYBEAN DIGEST. 1940-- . Thirteen issues a year.

The Blue Book is the thirteenth issue, an annual directory of the industry. Lists current soybean publications, by state.

#### National Peanut Council

Publishes PEANUT NEWS. 1941-- . Bimonthly.

#### Potato Association of America

Publishes AMERICAN POTATO JOURNAL. 1922-- . Monthly.



Society for Range Management

Publishes JOURNAL OF RANGE MANAGEMENT. 1948-- . Bimonthly; RANGEMAN'S NEWS. 1969-- . Bimonthly.

Soil Conservation Society of America (United States)

Publishes JOURNAL OF SOIL AND WATER CONSERVATION. 1946-- . Bimonthly.



Part 3

AGRICULTURAL ENTERPRISES—HORTICULTURAL CROPS



## Chapter 1

### HORTICULTURAL CROPS—GENERAL

Goren, Nurit, and Mendel, K., eds. INTERNATIONAL HORTICULTURAL CONGRESS: PROCEEDINGS. 5 vols. Tel Aviv: Israel Ministry of Agriculture, 1972. 1,302 p. Chapter bibliis. Author index.

Papers presented during the Eighteenth International Horticultural Congress, sponsored by the International Society of Horticultural Science, held 15-25 March 1970 in Tel Aviv.

Volume 1: ABSTRACTS OF CONTRIBUTED PAPERS, 259 p., most in English, some in French, Spanish, and so forth. There is no translation. Author index in this volume.

Volume 2: RECORD OF THE CONGRESS, 132 p. Lists participants. Symposium papers on biological research in irrigation problems, and on the horticultural aspects of phytotrone, are abstracted.

Volume 3: PRODUCTION OF HEALTHY PLANTS BY THERAPEUTIC AND OTHER METHODS AND THEIR MAINTENANCE AND USE, 115 p.

Volume 4, 435 p., presents papers about temperate and tropical fruits, subtropical fruits, plantation crops, and use of mechanization.

Volume 5, 371 p., covers vegetables, floriculture, economics. Contains the author index for volumes 2-5.

Examined and annotated by Chia-Lin Wong.

Hawker, M.F.J., and Keenley-Side, J.F. HORTICULTURAL MACHINERY. London: William MacDonald & Co., 1971. 169 p. Illus., pls.

Not located for examination.

Mortenson, Ernest, and Bullard, Ervin T. HANDBOOK OF TROPICAL AND SUBTROPICAL HORTICULTURE. Washington, D.C.: U.S. Department of State, Agency for International Development, [1966]. viii, 186 p. Illus., (part color), tables, reading list.

All major fruit, tree, and vegetable crops are described and pictured. Gives information on seed storage, varieties, soil, fertilizers, plant spacings, temperature requirement, cultivation, and insect control.

Shurtoff, Malcolm C. HOW TO CONTROL PLANT DISEASE IN HOME AND GARDEN. Ames: Iowa State University Press, 1962. viii, 520 p. Illus., glossary.

A practical reference book for both professional and amateur gardeners.

Introduction tells how to use the book, where to find additional help. Lists land-grant institutions and agricultural experiment stations. Instructions are given for sending plant specimens to those agencies.

Section 2, "What Is It?", describes environmental factors and general characteristics of plant diseases.

Section 3, "What Can I Do About It?", explains methods of prevention, materials and equipment for keeping diseases in check.

Section 4 lists garden plants and their diseases.

Appendixes include spray and dust application schedules for fruit.

Webber, R. MARKET GARDENING; THE HISTORY OF COMMERCIAL FLOWER, FRUIT AND VEGETABLE GROWING. London: David & Charles, 1972. 226 p. Illus.

Not located for examination.

Wright, R.C.M. A HANDBOOK OF PLANT PROPAGATION; A PRACTICAL GUIDE TO THE VARIOUS METHODS OF PROPAGATING TREES, SHRUBS, HERBACEOUS PLANTS, FRUITS AND VEGETABLES. London: Ward Lock, [1973]. 192 p.

Chapter 20: "The Propagation of Hardy Fruit," pp. 159-66, covers black currants, gooseberries, blackberries. The tree fruits discussed are apples, pears, plums, and cherries.

## Chapter 2

### FRUIT PRODUCTION

#### GENERAL

Cargill, B.F., and Rossmiller, G.E., eds. "Fruit and Vegetable Harvest Mechanization; Technological Applications." East Lansing: Michigan State University, Rural Manpower Center, 1969. viii, 838 p. Mimeographed.

First of three publications on manpower implications in fruit and vegetable harvesting.

Production, manpower, engineering outlook; mechanical harvesting effect on handling; root, bulb, and tuber vegetables; fruit and pod vegetables; vine crops, leafy and stem vegetables; on-ground (strawberries); high and low bush fruits; deciduous fruits are examined.

"Future World of Fruit and Vegetable Harvesting," pp. 825-32, by Carl W. Hall.

Childers, Norman Franklin. MODERN FRUIT SCIENCE; ORCHARD AND SMALL FRUIT CULTURE. 5th ed. New Brunswick, N.J.: Rutgers-The State University, [1973]. 976 p. Illus., maps, diags., glossary.

Aimed at the college student, but of reference value to the grower who wishes to master more detail about his business.

Emphasis is on apples: regions where grown, production, varieties, planting, pruning, soil management, flower-bud set, pollination, fruit set, thinning, injury, harvesting, packing and processing, storing, marketing.

The same descriptive treatment is given in briefer form for pears and quinces, peaches, nectarines, apricots, almonds, plums, cherries; edible nuts--almonds, filberts, pecans, walnuts, chestnuts, figs, persimmons.

A philosophy of orchard operation, improvement of management, worth of an orchard, orchard condemnation value, farm accounting by computer, page 890.



Apple production costs in New York State (1971), page 904.

Appendix has lists of scientific names of some deciduous fruits, scientific and popular fruit-growing publications inside United States, newsletters, abstract journals, suggested pomology books for fruit growers and technical workers.

Davidson, R.E., and Pears, L.M. INSECTS, PESTS OF FARM, GARDEN AND ORCHARD. 6th ed. New York: John Wiley & Sons, [1966]. 675 p. Illus.

Chapter 17: "Insects Injurious to Pome Fruits," pp. 426-66.

Chapter 18: "Insects Injurious to Stone Fruits," pp. 467-88.

Chapter 19: "Insects Injurious to Grapes," pp. 489-507.

Chapter 20: "Insects Injurious to Small Fruits," pp. 508-35, includes strawberries, raspberries, blackberries, currants, gooseberries.

Chapter 21: "Insects Injurious to Citrus," pp. 536-58.

DeOng, E.R.; Bishop, D.; and Bishop, J.L., Jr. INSECT, DISEASE, AND WEED CONTROL. [New York]: Chemical Publishing Co., 1972. 370 p.

Chapter 7: "Insects and Diseases of Orchards and Vineyards," pp. 199-250.

Donahue, Roy L. OUR SOILS AND THEIR MANAGEMENT; INCREASING PRODUCTION THROUGH SOIL AND WATER CONSERVATION. 3d ed. Danville, Ill.: Interstate Printers & Publishers, 1970. 683 p. Illus., maps, diags.

Chapter 19: "Managing Soil and Water for Orchards," pp. 559-79.

Folley, R.R.W. BRITISH FRUIT FARMING; AN ECONOMIC STUDY OF THE PRODUCTION AND MARKETING OF APPLES AND PEARS. Report no. 64. [Cambridge, England]: Cambridge University School of Agriculture, Farm Economics Branch, 1966. 71 p.

Not located for examination.

Hartman, H[udson].T., and Kester, D.E. PLANT PROPAGATION; PRINCIPLES AND PRACTICES. 2d ed. Englewood Cliffs, N.J.: Prentice-Hall, 1968. x, 702 p. Illus., reading list.

Chapter 17: "Propagation Methods and Rootstocks for the Important Fruit and Nut Species," pp. 561-617.

Arranged alphabetically with common names followed by Latin names in parentheses.

Popenoe, Wilson. MANUAL OF TROPICAL AND SUBTROPICAL FRUITS, EXCLUDING THE BANANA, COCONUT, PINEAPPLE, CITRUS FRUITS, OLIVE

AND FIG. New York: Macmillan, 1920. Reprint with new introduction. New York: Hafner Press International, 1974. 494 p. Illus.

In the introduction to the 1974 edition, the author points out that during the fifty years since the book's publication, horticultural varieties (cultivars) of the avocado and mango are made available in better varieties. Readers should use this manual for background, as a unique source, and check with agricultural experiment stations of state universities for available stocks.

Individual chapters are about avocados, mangoes, dates, papayas, and papaya relatives.

Simmons, Alan F. GROWING UNUSUAL FRUIT. New York: Walker and Co., [1972]. 354 p. 50 line drawings.

Each fruit is described by classification, physiology, origin, history, recommended site, culinary uses.

## CITRUS FRUIT

Anthony, Joseph P., Jr.; Mongelli, Robert C.; and Vaiz, Marvin A. AN EVALUATION OF SYSTEMS FOR HARVESTING GRAPEFRUIT IN TEXAS. ARS-NE-57. Washington, D.C.: U.S. Department of Agriculture, Agricultural Research Service, 1975. 26 p. Illus., tables.

A comparison study of three contract systems for harvesting grapefruit and three plant-employed systems.

Hopkins, James T. FIFTY YEARS OF CITRUS; THE FLORIDA CITRUS EXCHANGE, 1909-1959. Gainesville: University of Florida Press, 1960. ix, 279 p. Illus.

History and development of the first federated marketing cooperative in the Florida citrus industry.

Hume, H. Harold. CITRUS FRUITS. New York: Macmillan, 1957. 465 p. 213 illus.

The author writes from sixty years experience in growing citrus fruits. He cautions, "No book is ever up to date, no printed page can anticipate or elucidate. Always there will be a place for insight and skill of the grower."

The commercial importance of citrus crops and their botany precede coverage of the various citrus fruits--oranges in variety, shaddocks, grapefruit, kumquats, citrons, lemons, limes.

Approved practices of citrus grove management are described from location of the grove, citrus seeds, stock, plant breeding and

## Fruit Production

---

propagation, use of cover crops, irrigation, frost protection, pruning, diseases and insect pests, through picking, packing, and marketing the crop.

INTERNATIONAL CITRUS SYMPOSIUM: PROCEEDINGS. 3 vols. Edited by Homer D. Chapman. Riverside: University of California, 1968. 1,840 p.

Not located for examination.

Ziegler, Louis W., and Wolfe, Herbert S. CITRUS GROWING IN FLORIDA. Gainesville: University of Florida Press, 1961. 248 p. Illus.

Designed to serve large-scale growers as well as the home grove, this book covers origin and history of citrus fruits, the kinds, their propagation, climate. Management practices of citrus growing are described, including planting, bringing trees into production, fertilizing, spraying programs, general maintenance of the grove. Harvesting covers maturity of fruit, grading the crop, and so on.

Examined and annotated by Chia-Lin Wong, University of California, Riverside.

A review in AMERICAN FRUIT GROWER, December 1975, p. 27, announced a revision of the 1961 edition, updating the information. This revision was not available for examination.

## SMALL FRUIT AND VITICULTURE

Armstrong, W.D., and Chapin, Carl. GROWING GRAPES IN KENTUCKY. Publication HO-21. Lexington: University of Kentucky, College of Agriculture, Cooperative Extension Service, 1973. 21 p. Illus.

Selection of site, soil, varieties for use in Kentucky are reviewed. Description of starting a vineyard, spacing vines and planting, pruning, training young and mature vines. Also cultivation, lime application and fertilizers, cover crops and mulches, chemical weed control. Uneven and delayed ripening, protection from insects by sacking, control of insects and diseases are included.

Baker, H. APRICOTS, PEACHES, NECTARINES, FIGS, AND GRAPES. Wiley Handbook no. 8. Rev. text of H. Baker and E.G. Gilbert. London: Royal Horticultural Society, 1972. 32 p.

Vines in cold frames, pages 20-30.

Vines in the open, pages 30-32.

Boatfield, Jeffrey M. SOFT FRUIT; MODERN METHODS OF COMMERCIAL GROWING AND MARKETING FOR PROCESSING, THE FRESH FRUIT MARKET,

AND RETAIL SALES. London: C. Arthur Pearson, [1961]. 206 p. Illus., charts, tables, reading list.

Stresses sound commercial practices.

Part 1 gives facts and figures for the potential manager. Choice of site, capital requirements, advice on plant material, irrigation.

Part 2 is on manures, humus, organic manures, inorganic and nitrogenous fertilizers; phosphate and potassic fertilizers, lime, trace elements.

There is extensive coverage on marketing soft fruit: strawberries, in and out of season; black currants; red currants; gooseberries; raspberries; blackberries; loganberries; huckleberries; blueberries; cranberries.

Figures given on number of plants per acre, marking out a field, and other useful calculations.

Chapin, Carl, and Armstrong, W.D. STRAWBERRY PRODUCTION IN KENTUCKY. Publication HO-16. Lexington: University of Kentucky, College of Agriculture, Cooperative Extension Service, [1973]. 23 p.

This bulletin is for the commercial grower. Tells facts about yields, costs, profits, requirements for commercial production. Recommends varieties for Kentucky, pre- and post-planting care. Marketing procedures cover "pick-your-own," peddling, commission house, and sales to the frozen food processor.

Darrow, George M. THE STRAWBERRY: HISTORY, BREEDING, AND PHYSIOLOGY. New York: Holt, Rinehart & Winston, 1966. 461 p. Illus. (part color), maps, chapter biblios., reading list.

Published under the auspices of New England Institute for Medical Research because of the Institute's interest in basic research in genetics, including plants as well as animals.

Author aims to provide the information that he would like to have if he were starting a strawberry breeding operation.

Coverage includes strawberry history, species, varieties in both North America and the world. Reviews Department of Agriculture breeding program, as well as similar programs in the experiment stations of North America, Great Britain, Europe, and Japan.

Appendixes list strawberry breeders; chronology of strawberry varieties in the United States; parentage of those varieties.

Eck, Paul, ed., and Childers, Norman F[ranklin]., co-ed. BLUEBERRY CULTURE. New Brunswick, N.J.: Rutgers University Press, [1966]. 398 p. Illus., reading list, notes.

For commercial growers, horticulturists, and home gardeners, located where soil and climate conditions are suitable for blueberry cultivation.

A comprehensive coverage of the blueberry industry, botany, breeding, environment, management of propagation and planting; soil, nutrition, fertilizer practices, insects and disease control, harvesting, processing, storage, and marketing.

Frazier, N.W., ed. VIRUS DISEASES OF SMALL FRUITS AND GRAPEVINES; A HANDBOOK. Berkeley: University of California, Division of Agricultural Sciences, 1970. vii, 290 p. Illus.

Published to "facilitate the detection and identification of the diseases in question. Intended as an aid to growers; their advisors, and to regulatory personnel." Prepared following Sixteenth Annual Conference on Western Small Fruits Virus, Portland, Oregon, 13 January 1965.

Although small fruits are diverse and include species from different families, they have some group similarities and are often grown in the same geographic areas.

Chapters cover virus and virus-like diseases of the strawberry, gooseberry, currant, blueberry, cranberry, and grape.

List of abbreviations used for virus names, page 274. Table of diseases, mode of spread, and the natural crop host, page 276.

Hyams, Edward. STRAWBERRY GROWING COMPLETE; A SYSTEM FOR PROCURING FRUIT THROUGHOUT THE YEAR. London: Faber & Faber, 1962. 159 p. Illus., diags.

For the manager of a strawberry farm. The book is based on both the author's personal experience as a grower and the literature of strawberry growing.

Chapters describe varieties of berries for the nine-month season; the early, main, and late season; and the out of season. Problems of growing in each season are covered in a practical, readable style. The out-of-season chapters cover greenhouse growing of strawberries.

Plakidas, A.G. STRAWBERRY DISEASES. Baton Rouge: Louisiana State University Press, 1964. xi, 195 p. Illus., chapter biblios., reading list.

Based on more than twenty years of study of strawberry diseases in California and Louisiana. For this volume, Plakidas has organized and evaluated three decades of research / American and British workers. Most of the references are in the English language.

The references cover fungus disease of foliage, roots and crowns; fruit rots; bacterial diseases; diseases caused by nematodes, viruses, and non-infectious variegations.

Shoemaker, James Sheldon. SMALL FRUIT CULTURE. Westport, Conn.: AVI Publishing Co., 1975. 339 p. Illus.

A useful, up-to-date reference text for growers, as well as those who are studying the business.

Chapters on individual fruits include information on cultivars, pollination, propagation, location and site, planting, tillage, mulching, fertilizers, training where applicable, pruning, control of diseases and insects. Some chapters cover the industry and the impact on the marketplace of production of fruit from different areas, including adjacent countries.

Fruits discussed include: grapes--covering four varieties and the Geneva Double Curtain system for training; strawberries; bramble fruits in six parts; currants and gooseberries; blueberries in three parts; and cranberries.

Smith, Carter R., and Childers, Norman. Franklin, comps. THE STRAWBERRY: VARIETIES, CULTURE, MARKETING, PEST CONTROL. New Brunswick: New Jersey Agricultural Experiment Station, Rutgers: The State University, 1964[?]. 199 p. Illus.

Prepared from a national conference of state and federal research and extension workers held 24 and 25 January 1963 at the New Jersey Agricultural Experiment Station, New Brunswick.

Papers cover insects, disease and nematode control in strawberry culture; effects of the Mexican industry on that of the United States and Canada; performance of strawberry varieties; outlook of breeding programs. Irrigation, nutrition, winter protection, weed control, and labor-saving machinery are other topics included in the papers.

"Key Strawberry References to Literature," by B.R. Boyce, pp. 161-79.

Participants at the conference were key researchers in the United States and Canada.

Winkler, A.J.; Cook, J.A.; Kliewer, William; and Lider, L.A. GENERAL VITICULTURE. 2d ed. Berkeley and Los Angeles: University of California Press, 1974. 730 p. Illus., charts, maps.

Although titled "general" viticulture, this book presents in detail the practices which must be followed in grape production. After coverage of history and classifications of grapes, geographic distribution of grape-growing, climate and soils suitable, structure of the vine, its flower and berry set, chapters cover specific aspects of viticulture.

For example, the section on the support of the vines is divided by the method of harvesting--machine or hand. The section goes into detail about methods of training and pruning the young vines. Means of improving grape quality are explained--thinning, girdling, topping and pinching, plant growth regulation, and sprinkler cooling.

Wyld, Robin. THE HOW-TO BOOK ON STRAWBERRIES. Willoughby, Ohio: Meister Publishing Co., 1960. 112 p. Illus.

A primer for the small commercial grower and/or the home gardener.

A tabulated section, pages 107-9, covers the signs of, causes for, prevention of, or treatment for conditions when the strawberry plant does not thrive.

Recommends four books, as well as the bulletins of the Department of Agriculture and the state experiment stations.

### TREE FRUIT

American Pomological Society. NORTH AMERICAN APPLES: VARIETIES, ROOTSTOCKS, OUTLOOK. Edited by R.F. Carlson. East Lansing: Michigan State University Press, [1970]. 197 p.

A comprehensive coverage of changes and trends in apple production to meet the demand of the marketplace. Table, page 19, compares percent of apple production by varieties for 1915 with that for 1964.

Describes in detail the eight commercially popular apple varieties, their development and production.

Design of "Apple Orchards of Tomorrow" describes a plan using closely spaced, intensively managed, smaller trees.

Barsh, Raymond. FRUIT TREE GROWING; A HANDBOOK IN CONJUNCTION AND COLLABORATION WITH THE ROYAL HORTICULTURAL SOCIETY. Rev. ed. by E.G. Gilbert. Baltimore: Penguin Books, 1962. 359 p. Illus., 118 pls., 3 figs. Paperbound.

A compendium of information for the fruit grower. Chapters cover apples, pears, cherries, peaches, nectarines, plums, medlars, quince, almonds, apricots, figs. Discussion of each fruit covers site, soil, rootstock, planting, manuring, pruning, pests, renovation.

Section on renovating old trees, page 318.

Brooklyn Botanic Garden. HANDBOOK ON FRUIT TREES AND SHRUBS. PLANTS AND GARDENS 27 (1972): 84 p. Illus.

Brings together most of the recent information on fruit growing.



States that "American horticulture for the better part of its history, has concerned itself with fruit growing." Special edition of this journal devoted to fruit trees and shrubs.

Childers, Norman F[ranklin]., ed. CHEMICAL FRUIT THINNING OF PEACH AND APPLE. New Brunswick: New Jersey Agriculture Experiment Station, Rutgers --The State University, 1959. 56 p.

Compiled from a conference of state and federal research and extension workers and growers held on 11-12 March 1959.

Bibliography on apple and peach chemical thinning compiled by Lloyd A. Mitterling, Rutgers University, pages 46-53.

Fogle, H.W.; Keil, H.L.; Smith, W.L.; Mircetich, S.M.; Cochran, L.C.; and Baker, H. PEACH PRODUCTION. Agricultural Handbook no. 463. Washington, D.C.: U.S. Department of Agriculture, 1974. 90 p. Illus., tables, maps.

A comprehensive coverage of commercial peach production. History and geographic distribution of peaches are discussed. Recommendations are given for selecting orchard sites and cultivars; propagating and selecting rootstock; planting, pruning, and training. Management of production covers soil management, fertilization, irrigation, fruit thinning, low-temperature injury. The approved practices for controlling insects, fungal and bacterial diseases, virus and virus-like diseases are given. Management of marketing discusses transportation, storage, markets.

List of scientific names, diseases, insects, page 90.

Grubb, Norman H. CHERRIES. London: Crosby Lockwood Staples, 1949. 186 p. Illus. (part color), reading list, variety index.

Cherry culture is described, with recommendations for site and soil selection, propagation and rootstock planning, and choice of varieties. Orchard management for control of pests and disease is advised.

Cherries are classified and described by species and groups. Keys are provided for both varieties and confused nomenclature.

Heinicke, Don R. HIGH-DENSITY APPLE ORCHARDS--PLANNING, TRAINING, PRUNING. Washington, D.C.: U.S. Department of Agriculture, 1975. 34 p. Illus.

An introduction to high-density apple orchard management, an important change in apple production practices. The background and purpose of the system are reviewed in terms of production per unit and future demands in the market.

Recommends training and pruning methods; describes the procedure

for renewing old orchards for high-density production practices.

Hughes, Cledwyn. MAKING AN ORCHARD. London: Land Books, [1961]. 120 p. Illus., reading list.

This book views the installation of a fruit orchard as a property asset, a farm enterprise, and/or a means to enhance farm home living.

Chapter 2, pages 19-30, covers "top fruits"--apples, pears, plums, and cherries.

Chapter 3, "Preparation and Planning," pp. 31-47, presents four diagrams illustrating a planting layout.

Chapter 5: "Orchard Health," pp. 67-95 includes guidance in pollination, pruning, propagation, tree nutrition, disease control and spraying schedules, attainment of perfect tree fruit.

Chapter 7: "An Orchard Remembrancer," pp. 103-13, is a kind of narrative checklist for the orchardist on insecticides, spray schedules, and literature.

Morrison, J.W.; Cumming, W.A.; and Temmeman, H.J. TREE FRUITS FOR THE PRAIRIES. Publication 1222. Ottawa: Canadian Department of Agriculture, 1965. 30 p. Illus., reading list.

Discusses weather, selection of fruit varieties, establishment of the orchard, and management of the trees.

Examined and annotated by Chia-Lin Wong.

"National Peach Conference Held at Rutgers-the State University, New Brunswick, N.J., 11 and 12 March 1965." 2d updated ed. New Brunswick, N.J.: 1974. xii, 377 p. Illus. Mimeographed.

Papers by over seventy U.S. and Canadian authorities cover varieties; breeding objectives and needs; rootstock and weather problems; peach sites; nutrition decline; general culture. Pruning and training trends encompassed thinning methods and the use of growth regulators. Weed and pest control, as well as the effects of irrigation, fertilization, and pruning on peach yield and quality were other topics for papers. Papers on the economics of marketing peaches ranged from maturity and harvesting to storage and processing.

"Production and Value of Peaches in the United States, by states, 1971, 1972, 1973," p. 375.

Key references to 1973 prepared by Dennis A. Abjulla and Carlos A. Fierro, pages 351-74.

Potter, J.M.S. PRUNING HARDY FRUITS. Wisley Handbook no. 7. London: Royal Horticultural Society, 1972. 16 p. Illus.

The book is concerned with pruning established trees. The text is aimed at the amateur rather than the commercial orchardist, but can serve as a useful reference for the manager considering fruit as a farm enterprise. The text assumes reader knowledge of principles underlying pruning different kinds of fruit trees.

"Rejuvenating Old Apple and Pear Trees," p. 15.

Scheer, Arnold H., and Juergenson, Elwood M. APPROVED PRACTICES IN FRUIT PRODUCTION. Danville, Ill.: Interstate Printers & Publishers, [1964]. 504 p. Illus.

Describes approved practices for managing a fruit enterprise.

Begins with an overview of the fruit growing industry, followed by chapters on establishing the orchard; pruning, fertilizing, irrigating, and thinning; protecting from cold and animals; controlling pests and disease; harvesting and marketing.

Individual chapters on almonds, apples, apricots, cherries, peaches, pears, plums and prunes, Persian walnuts.

Appendix: "Fruit Study Outline."

Stevenson, W.A. SEAWEED IN AGRICULTURE AND HORTICULTURE. Preface and update by Ernest Booth. 3d ed. Pauma Valley, Calif.: Bargyla & Gylver Rateaver, 1974. 242 p. Illus. Paperbound.

Chapter 8: "Yield, Crop Quality and Health," pp. 95-124, reports trials using seaweed to fertilize apples in New Hampshire.

Stiles, Warren C., and Childers, Norman F. FACTORS AFFECTING FRUIT CONDITIONS: PAPERS. New Brunswick: New Jersey Agricultural Experiment Station, Rutgers: The State University, 1961. ix, 181 p.

Session papers of a conference of state and federal research and extension workers and growers. Topics include nutrition of apples and peaches; time of harvest; handling and storage of apples, peaches, nectarines, pears; apples from storage to customer. Storage topics include film liners for fruit storage; construction and management of storage facilities; and physiological disorders of stored fruit.

Key reference list compiled by Leslie A. Baird, pages 164-74.

Street, Frank T. 1972 PEACH VARIETY PERFORMANCE. Publication H-O no. 6. Lexington: University of Kentucky Department of Horticulture, 1973. 5 p. Illus.

Lists varieties, ripening dates, and percent live buds per foot.

The performance trials were established at Henderson and Princeton, Kentucky, in 1971.

SYMPOSIUM ON STONE-FRUIT THINNING, DAVIS, CA: PROCEEDINGS. Edited by Sidney R. Siemer. North Chicago: AMDEL (Abbott Laboratories, Agricultural Division), 1968. 61 p.

Thirteen papers on stone-fruit thinning and the use of chemical agents, presented on 18 August 1968. Fruits included were peaches and plums. States represented at the meeting were California, Michigan, New Jersey, South Carolina, and Utah.

Teskey, Benjamin J.E., and Shoemaker, James S[heldon]. TREE FRUIT PRODUCTION. 2d ed. Westport, Conn.: AVI Publishing Co., 1972. viii, 336 p. Illus.

A text and reference book on North American production of tree fruit.

Covers orchard management: soil, use of fertilizer, pruning, thinning of fruit, mechanical harvesting, storage, marketing.

Three chapters on dwarfed apples and pears.

Tukey, Harold Bradford. DWARFED FRUIT TREES FOR ORCHARD, GARDEN, AND HOME WITH SPECIAL REFERENCE TO THE CONTROL OF TREE SIZE AND FRUITING IN COMMERCIAL FRUIT PRODUCTION. London: Macmillan, 1964. xi, 562 p. Illus.

General background is given on propagation and orchard performance of dwarf trees.

Advantages of dwarfed trees for the commercial orchardist are explained on the basis of early fruiting; adjustments to changing market requirements; easier thinning, spraying, and harvesting.

Weinberger, John H. GROWING NECTARINES. Agricultural Handbook no. 379. Washington, D.C.: U.S. Department of Agriculture, 1975. 22 p. Illus.

Explains the differences between the growing practices for nectarines and those for peaches. Discusses growing-areas, best orchard sites, varieties, establishment of an orchard, training, pruning, thinning, fertilizing, soil management, harvesting. Fungal and bacterial diseases, virus diseases, and insect pests are covered.

Wynn, Peter. APPLES: HISTORY, FOLKLORE, HORTICULTURE AND GAS-TRONOMY. New York: Hawthorn Books, [1975]. viii, 280 p.

Written by a man with great interest in pomology, who has put together information about apples, including history and folklore.

The chapter, "The Apple and Its Varieties," provides names and addresses of nurseries. The chapter, "Growing Your Own Apples,"

describes the care of the apple tree from the second year onward.

Although the orchardist may consider this "recreational" reading, the book can enhance the business of growing apples.

## TREE NUTS

Brison, Fred R. PECAN CULTURE. College Station: Texas A & M University, [1974]. x, 292 p. Illus.

Based on the author's sixty years' experience in pecan growing, this book is written for the established pecan orchardist, or for one who is considering the addition of a pecan enterprise.

Chapter 7: "Establishing a Pecan Orchard," pp. 149-68.

Chapter 8: "Factors in Management of a Pecan Orchard," pp. 169-92.

Other chapters are about the pecan industry; the pecan tree and pecan varieties; soil and climate; propagation, budding, grafting; cuttage and layerage; insect diseases and control. The chapter titled "Trivia," relates experiences of pecan growers.

Jaynes, Richard A., ed. HANDBOOK OF NORTH AMERICAN NUT TREES. [Knoxville, Tenn.: Northern Nut Growers Association, 1969]. vii, 421 p. Illus., chapter bibliis.

Emphasis is on the production of quality nuts for human consumption.

Part 1 covers the history of nut trees and their value as a food resource. Part 2, gives general background for culture, propagation, and protection of crop from diseases, insects, and mites.

Part 3 has chapters on each of the leading commercial nut varieties--black walnuts, Persian or English walnuts, pecans. Provides detailed recommendations for establishing orchards, as well as approved management practices. These chapters include the names of state and regional agencies engaged in tree nut research; breeding improvements; techniques for cleaning, storing, and so on.



## Chapter 3

### VEGETABLE CROPS

Davidson, R.E., and Peairs, L.M. INSECTS, PESTS OF FARM, GARDEN AND ORCHARD. 6th ed. New York: John Wiley & Sons, [1966]. 675 p. Illus.

Chapter 14: "Insects Injurious to Cucurbit and Cruciferous Crops," pp. 336-55, includes cucumbers, squash, melons, cabbage, turnips.

Chapter 15: "Insects Injurious to Asparagus, Beets, Onions, and Other Vegetable Crops," pp. 356-78.

DeOng, E.R.; Bishop, D.; and Bishop, J.L., Jr. INSECT, DISEASE AND WEED CONTROL. [New York]: Chemical Publishing Co., 1972. 370 p.

Chapter 8: "Insects and Diseases in the Garden and Truck Farm," pp. 251-84.

Knott, J. Edward. HANDBOOK FOR VEGETABLE GROWERS. Rev. ed. New York: John Wiley & Sons, [1966]. 245 p. Illus. Spiral-bound.

Most of the information in this pocket-size handbook is tabulated for quick, easy-to-find references on vegetable production. Omits discussion of varieties. Author recommends obtaining lists from state colleges and selecting disease-resistant varieties from seed catalogs.

"Classification of Vegetables," pp. 1-4, is a botanical list of vegetable crops, giving family, genera, and specific names.

The text concentrates on practices in production. Plant growing, planting, soils, fertilizers, water, pest control, harvesting, and storage are briefly covered.

Metcalf, C.L., and Flint, W.P. DESTRUCTIVE AND USEFUL INSECTS; THEIR HABITS AND CONTROL. 4th ed. New York: McGraw-Hill Book Co., 1962. xii, 1,087 p. Illus., tables.

Chapter 14: "Insects Injurious to Vegetable Gardens and Truck Crops," pp. 598-683.



## Vegetable Crops

---

Nieuwhop, M. COLE CROPS. London: Leonard Hill, 1969. 375 p. Illus., pls., diags., chapter biblios., author, subject indexes.

Comprehensive coverage of crops in the cabbage family, including chapters on history, botany, and world production.

Chapters 3-8 discuss cabbages, cauliflower, brussels sprouts, sprouting broccoli, curly kale, kohlrabi. Each chapter discusses soil, climate, varieties, culture, raising plants, harvesting.

Chapters 9-12 cover seeds, breeding, fertilizing, disease and pest control.

Two chapters are on processing and storing harvested cole crops.

Ware, George W., and McCollum, J.P. PROCESSING VEGETABLE CROPS. Danville, Ill.: Interstate Printers & Publishers, [1968]. 558 p.

Designed as a reference book or manual for agricultural workers. Chapters are complete in themselves, but cross-references are used.

Intended to coordinate reliable and complete information on various phases of vegetable growing. The first section of the manual describes the market garden industry. Includes a classification of vegetables; breeding for improvement; seeds, management of soils and fertilizers; growing, hardening, and transplanting plants. Cultivation, rotation, irrigation and mulching, control of disease and insects, harvesting, storing, handling for market are also covered in this section.

In the second section, chapters describe each vegetable by class, origin, history, economic importance; trends in production efficiency; and the techniques of growing each kind of plant.

Whitaker, Thomas W.; Ryder, E.J.; Rubatsky, V.E.; and Vail, P.V. LETTUCE PRODUCTION IN THE UNITED STATES. Washington, D.C.: U.S. Department of Agriculture, 1974. 42 p. Illus. (part color), tables, reading list.

Comprehensive coverage of an important farm crop made available to the U.S. consumer all year around.

Botany, physiology, genetics, breeding, seed production, temperature, soil management; fertilizers; seedbed preparation; planting, thinning, irrigation, culture; weed, insect, and disease control; harvesting, and marketing are all covered briefly.

Tables list types of lettuce, areas of cultivation, and harvest season. Illustrations show varieties.

## Chapter 4

### GREENHOUSE CULTURE AND HYDROPONICS

Bentley, Maxwell. *HYDROPONICS PLUS: THE BENTLEY SYSTEM; A NEW APPROACH TO INTENSIFIED FARMING*. Introduction by Howard S. Turkel. Sioux Falls, S. Dak.: O'Connor Printers, [1973]. 251 p. Illus. (part color).

Turkel's introduction describes the work of Maxwell Bentley--agronomist, biochemist and pharmacologist--to develop techniques for production-line farming. The aims of Bentley's thirty years of research were a continuous, uniform crop-producing system; maximum yield per crop, more crops per year; economically viable delivery system.

Chapters cover formularies for commercial mini-farms, primary crops for outdoor systems and greenhouses, technical information such as nutrient solutions, aggregates, pH control, water, pest and disease control. A directory of suppliers is included.

Cook, R.L. *SOIL MANAGEMENT FOR CONSERVATION AND PRODUCTION*. New York: John Wiley & Sons, [1962]. xii, 527 p. Illus. (part color), tables.

Chapter 22: "Greenhouse Soil Management," pp. 448-69.

Davidson, R.E., and Pears, L.M. *INSECTS, PESTS OF FARM, GARDEN AND ORCHARD*. 6th ed. New York: John Wiley & Sons, [1966]. 675 p. Illus.

Chapter 13: "Insects Injurious to Greenhouse . . . and Vegetable Crops," pp. 308-35.

Ellis, Carleton, and Swaney, Miller W. *SOILLESS GROWTH OF PLANTS; USE OF NUTRIENT SOLUTIONS, WATER, SAND, CINDER, ETC.* New York: Reinhold Publishers Corp., 1938. 155 p. Illus. (color).

A nontechnical discussion of the chemistry of plant life and review of three recognized modifications of soilless growth: water, sand-culture, self-irrigation system.

Chapter 5: "Commercial Aspects," pp. 98-115, includes nutrient

formulas, special chemicals, common detriments.

Hussey, Norman W.; Read, W.H.; and Hesling, J.J. THE PESTS OF PROTECTED CULTIVATION; THE BIOLOGY AND CONTROL OF GLASSHOUSES AND MUSHROOM PESTS. London: Edward Arnold & Co., [1969]. 404 p. Illus., chapter bibliis.

Bionomics and control of arthropod pests and other insects, slugs, snails, nematodes, eel worms of greenhouse-managed crops.

Laurie, Alexis. THE GREENHOUSE WORKER. Columbus: Ohio State University Department of Agricultural Education Service, 1970. x, 152 p. Illus., reading list, glossary.

This manual was prepared by Dr. Laurie for horticultural students who will be working in greenhouses.

The text covers commercial greenhouse construction, plants, operating procedures, planting, and so on.

Mack, Warren B. NUTRIENT SOLUTION CULTURE OF VEGETABLE AND FLOWER. Paper 938, Journal series. University Park: Pennsylvania State University Agricultural Experiment Station, 1966. 12 p.

A brief history of chemical agriculture is given, pages 4-6, with references.

Methods of culture with nutrient solution are described--Shive, Gericke, and Withrow methods.

Northen, H.T., and Northen, R.T. GREENHOUSE GARDENING. 2d ed. New York: Ronald Press Co., 1973. 388 p. Illus.

Chapters 2-6 describe and illustrate planning and building a greenhouse. Includes information on soil, nutrition, and growing plants from seed.

Chapter 23: "Vegetables," pp. 368-74, describes greenhouse crops grown at fifty and sixty degrees Fahrenheit.

Stoughton, R.H. SOILLESS CULTIVATION AND ITS APPLICATION TO COMMERCIAL HORTICULTURAL CROP PRODUCTION. Rome: Food and Agricultural Organization of the United Nations, 1969. 61 p. Illus., diags., reading list.

Intended as a practical manual of instruction for those who propose to try soilless cultivation. The instructions are confined to a commercial operation.

In chapters 1-5, the advantages and disadvantages of basic soilless system are examined.

Chapter 6, pages 16-17, gives uses of soilless culture and chapter

7, pages 18-30, describes examples of installations.

Wittwer, S.H., and Hanna, S. GREENHOUSE TOMATOES, GUIDELINES FOR SUCCESSFUL PRODUCTION. East Lansing: Michigan State University Press, 1969. vii, 95 p.

The practices followed in greenhouse tomato culture in North Central United States is told in a way which has wide application.

Map: "Geographical Distribution of the Greenhouse Tomato Industry in North America," p. 4.

Chapters cover new types of culture, outlook, and projection, cultivation and management of crops.

Literature cited on "Culture and Marketing," pp. 92-95.



## Chapter 5

### MUSHROOM PRODUCTION

Atkins, Fred C. GUIDE TO MUSHROOM GROWING. London: Faber and Faber, [1974]. 122 p. Illus. (part color), chapter biblio.

Guide to the Tray System--the method by which 95 percent of the mushrooms produced in the United Kingdom are grown. The system has little relevance to the shelf system used in the United States.

Gives a brief overview of commercial growth, then describes in detail, complete with plans, the buildings with compost areas, trays, peat-heat room, spawn-running room, cropping house. The service buildings are related to the plan--boiler house, casing-material-preparation room, room for fungicides and insecticides, packing room, repair shop, office, rest room.

Posting theory and practice, spawn and spawn-making, casing materials and casing methods are all discussed in detail. Among the crop management problems treated are economics and budget control.

Genders, Roy. MUSHROOM GROWING FOR EVERYONE. London: Faber and Faber, [1969]. 216 p. Illus., glossary.

Chapter 3: "Scientific Crop Production," pp. 53-66.

Chapter 12: "Growing Mushrooms Outside," pp. 164-75, tells about methods and problems with pests and disease.

Simons, Arthur J. MUSHROOM GROWING. [New York]: Drake Publishing Co., [1972]. 96 p. Illus.

Part 2: "Cultivated Mushrooms," discusses sites and methods. Stresses hygiene.

Outdoor beds under cloches; cold frames; indoor beds in sheds, outbuildings, and garages are described in the chapter "Where to Grow."





## Chapter 6

### REFERENCE MATERIALS RELATED TO PART 3

#### ABSTRACT JOURNALS

ABSTRACTS OF ENTOMOLOGY. Philadelphia: Biosciences Information Services of Biological Abstracts, 1900-- . Monthly.

Pure and applied studies of insects and arachnida.

HORTICULTURAL ABSTRACTS. Farnham Royal, England: Commonwealth Agricultural Bureaux, Commonwealth Bureau of Horticulture and Plantation Crops, 1931-- . Monthly. Author, subject indexes. Annual comprehensive and cumulative subject indexes.

Provides about 9,000 abstracts a year, covering the world's scientific literature on horticulture and plantation crops, both temperate and tropic.

#### BIBLIOGRAPHIES

Anderson, William. THE STRAWBERRY; A WORLD BIBLIOGRAPHY, 1920-1966. Metuchen, N.J.: Scarecrow Press, 1969. iv, 731 p.

References on commercial cultivation of and research on the strawberry.

Entries are numbered, giving author, title, source, number of pages, date. Theses are listed by foreign title and translated English title.

Entry numbers 523-938 are for North America, of which numbers 561-938 cover the United States.

Entries 56-116 are for Great Britain; 1032-69, Australia.

References cover all aspects of strawberry cultivation, genetics, economics, marketing costs, and processing.

Under "Plant Breeding" entry numbers 3138-205 are for Great Britain; 3571-76, Australia; 3577-80, New Zealand; 3599-618, Canada; 3619-976, the United States.

### ANNUALS, ADVANCES, REVIEWS, YEARBOOKS

ADVANCES IN INSECT PHYSIOLOGY. Edited by J.W.L. Beaumont, J.E. Treherne, and V.B. Wigglesworth. London: Academic Press, 1963-- . Annual.

CURRENT ADVANCES IN PLANT SCIENCE. Edited by H. Smith. Elmsford, N.Y.: Pergamon Press, 1972-- . Monthly.

FARM AND GARDEN EQUIPMENT GUIDE. London: Agricultural Press. Annual.

Janick, Jules, and Moore, J.N. ADVANCES IN FRUIT BREEDING. Lafayette, Ind.: Purdue University Press, 1975..

Not located for examination.

THE SCIENCE AND PRACTICE OF MUSHROOM GROWING, A CUMULATIVE BOOK ISSUED QUARTERLY. Santa Cruz, Calif.: Stoller Research Co., February 1971-- . Quarterly.

### REFERENCE BOOKS

Bailey, Liberty Hyde. THE STANDARD ENCYCLOPEDIA OF HORTICULTURE: A DISCUSSION, FOR THE AMATEUR, AND THE PROFESSIONAL AND COMMERCIAL GROWER, OF THE KINDS, CHARACTERISTICS AND METHODS OF CULTIVATION OF THE SPECIES OF PLANTS GROWN IN THE REGIONS OF THE UNITED STATES AND CANADA FOR ORNAMENT, FOR FANCY, FOR FRUIT AND FOR VEGETABLES: WITH KEYS TO THE NATURAL FAMILIES AND GENERA, DESCRIPTION OF THE HORTICULTURAL CAPABILITIES OF THE STATES AND PROVINCES AND DEPENDENT ISLANDS, AND SKETCHES OF EMINENT HORTICULTURISTS. 2d ed. 3 vols. New York: Macmillan, 1947. 3,639 p. Illus. (part color).

Truly the "standard" for horticultural reference. Originally issued 1900-1914, in six volumes. Rewritten, enlarged, and reset for the 1928-42 edition. Designed with two-fold purpose--to identify species, and to describe cultivation of the plants, "both essential to understanding horticulture." Many horticulturists contributed articles on their specialties.

Volume 1, pp. 1-1200, covers the alphabet A-E, with plants entered under family name in capital letters followed by genera. In this volume, Karl M. Wiegand gives "A Synopsis of the Plant Kingdom," pp. 1-78. Also includes "Key to Families and Genera," pp. 79-136; "Index to Key Families and Genera," pp. 137-47; "English Equivalents of Latin Names of Species," pp. 148-59; "Glossary of the Usual Botanical and Horticultural Technical Words," pp. 160-70.

Volume 2: pp. 1201-2422, covers F-O; volume 3: pp. 2423-3639, P-Z. Volume 2 also includes a horticultural bibliography and biographies of horticulturists.

Brooks, Reid M., and Olmo, H.P., comps. REGISTER OF NEW FRUIT AND NUT VARIETIES. 2d ed. Berkeley and Los Angeles: University of California Press, 1972. 708 p.

The name, origin, parentage, and valuable characteristics are given for the new varieties of fruits and nuts that show promise of becoming commercially important. All varieties have originated in North America since 1920.

Reference to a variety may be located in the index either by name, species, or patent number. Plant introduction numbers are given where appropriate.

Names of the cooperating horticulturists in Canada and the United States are listed by province or state.

DIRECTORY AND GUIDE TO WHO'S WHO IN HORTICULTURE AND GARDENING. 3 vols. London: Parsons Horticultural Services, 1970-- . 578 p.

Volume 1: GROWERS, 198 p. Lists specialists, garden centers, county horticultural advisors, seed growers, research centers, nurseries, wholesale growers. There are lists of horticultural training facilities and directors of parks.

Volume 2: SERVICES, 211 p. Overseas section lists United States Service, pages 205-7. Lists horticultural societies; botanic gardens by state; greenhouse, tool, and machinery manufacturers; horticultural publications.

Volume 3: MANUFACTURING, 169 p.

ELSEVIER'S DICTIONARY OF HORTICULTURE IN NINE LANGUAGES. Edited by J. Nijdam. The Hague: Netherlands Ministry of Agriculture and Fisheries, Horticultural Division, 1970. 561 p.

The nine languages are English, French, Dutch, German, Danish, Swedish, Spanish, Italian, Latin.

NEW ILLUSTRATED ENCYCLOPEDIA OF GARDENING. 6 vols., unabridged. Edited by T.H. Everett. New York: Greystone Press, 1962. 2,646 p.

For amateurs as well as professional gardeners, nurserymen, and plant growers. The sequence is alphabetical, with volume 1 including a garden calendar and volume 6 including a list of pests and diseases.

Organic Gardening and Farming Magazine staff. THE ENCYCLOPEDIA OF ORGANIC GARDENING. Emmaus, Pa.: Rodale Press, 1975. xi, 1,145 p.

Covers "the whole field of horticulture from the organic point of view."

Format is the two-column page. Plants are entered under the common name, with the Latin name in parentheses. Explanations are brief, depending upon plant and/or subject.

Smith, Muriel W.G., comp. NATIONAL APPLE REGISTER OF THE UNITED KINGDOM. London: Great Britain Ministry of Agriculture, Fisheries, and Food, 1971. 667 p.

This register, representing more than ten years of work in compilation, aims to include all names used for every apple cultivar known to have been grown in Great Britain, 1853-1968.

The aim of the registration is one name per cultivar and one cultivar by name. This work is the result of a decision by the International Commission for Horticulture Nomenclature and Registration that the registration should begin with apples. Each country is to prepare a national register according to an agreed format.

Introduction to this register explains the use of the volume. Details include place of origin, originator, introducer, owner of the parent of a sport; date of discovery, crossing; first fruit; testing in national fruit trials; awards received from exhibits; description--characteristics of flower, tree, fruit, size, shape, skin, season.

## PERIODICALS

More information on these periodicals can be found in part 7: Appendixes.

AMERICAN FRUIT GROWER. Willoughby, Ohio: Meister Publishing Co., 1880-- . Monthly.

Production, pruning, and other management problems covered in articles. News, book reviews.

Has published AMERICAN FRUIT GROWERS' DIRECTORY annually since 1943.

AMERICAN VEGETABLE GROWER. Willoughby, Ohio: Meister Publishing Co., 1951-- . Monthly.

Articles on plants and production, labor situation. Trends and forecasts. New equipment items.

Has published AMERICAN VEGETABLE GROWERS' DIRECTORY annually since 1955.

CITRUS INDUSTRY MAGAZINE. Bartow, Fla.: Associated Publications Corp., 1920-- . Monthly.

Published for the Florida citrus grower.

CRANBERRIES, THE NATIONAL CRANBERRY MAGAZINE. Kingston, Mass.: Pilgrim Publishers, 1936-- . Monthly.

Special articles, agricultural notes, regional news--Wisconsin, New Jersey, and so on.

NURSERY BUSINESS. Elm Grove, Wis.: Brantwood Publications, 1955-- . 8/year.

The management magazine of the horticultural industry.

## U.S. GOVERNMENT SERIAL PUBLICATIONS

RELEASES ON FRUIT. Washington, D.C.: U.S. Department of Agriculture, Crop Reporting Board.

CHERRIES. 1976-- . Annual. (First published as SOUR CHERRY REPORT, 1945-67; as TART CHERRIES, 1968-70; CHERRY PRODUCTION, 1971-75.)

CHERRY UTILIZATION. 1974-- . Annual. (Previously shown in FRUITS--NONCITRUS, PART II.)

CITRUS FRUITS. 1976-- . Annual. (Published under title CITRUS USE & VALUE, 1975. Prior to 1946 published in CROP PRODUCTION periodically.)

COMMERCIAL APPLES BY VARIETIES. 1945-- . Annual.

CRANBERRIES. 1941-- . Annual.

NONCITRUS FRUITS & NUTS. 1974-- . Annual. (First published as FRUITS--13 NON-CITRUS, 1946-47; FRUITS--NON-CITRUS & NUT CROPS, 1948-57; FRUITS--NON-CITRUS & TREE NUTS, 1956-57; NONCITRUS, PART I & PART II & TREE NUTS, 1958-73.)

NONCITRUS FRUITS & NUTS MID-YEAR SUPPLEMENT. 1947-- . Annual. (Dates same as NONCITRUS FRUITS & NUTS, above.)

FRUIT SITUATION. Washington, D.C.: U.S. Department of Agriculture, Economic Research Service, 1937-- . Annual.

Published February, July, September, November. Carries lead articles, reviews the fruit situation and outlook. Covers all types of fruits and tree nuts. Includes statistical tables.

## Reference Materials

---

RELEASES ON VEGETABLES. Washington, D.C.: U.S. Department of Agriculture, Crop Reporting Board.

CELERY. 1961-- . Monthly.

ONION STOCKS. 1942-- . Annual.

TOMATO REPORT. 1961-- . Every Tuesday during growing season.

VEGETABLES--FRESH MARKET. 1955-- . 10/year. (First published as COMMERCIAL TRUCK & CANNING CROPS, 1936-39; COMMERCIAL TRUCK CROPS, 1940-54.)

VEGETABLES--PROCESSING. 1955-- . 6/year; annual summary December.

U.S. FRESH MARKET VEGETABLE STATISTICS, 1949-75. Washington, D.C.: U.S. Department of Agriculture, Statistical Reporting Service. Statistical Bulletin no. 558. 1976. 106 p.

A basic reference on the U.S. fresh vegetable industry covering production, price, foreign trade, and other data. This publication covers the years 1949-1975 and will be updated periodically. Serves as a supplement to the VEGETABLE SITUATION, published four times a year.

VEGETABLE SITUATION. Washington, D.C.: U.S. Department of Agriculture, Economic Research Service, 1955-- . Quarterly.

Published January, May, August, November. Carries recent developments and outlook for fresh and processed vegetables, including potatoes, sweet potatoes, mushrooms, dry edible beans, dry field beans. Statistical tables.

CROP REPORTING BOARD RELEASE--MUSHROOMS. Washington, D.C.: U.S. Department of Agriculture, Crop Reporting Board, 1966-- . Annual.

## ORGANIZATIONS, ASSOCIATIONS, SOCIETIES, INSTITUTES

The addresses of these organizations can be found in part 7: Appendixes. Publications limited to members.

American Association of Nurserymen.

Has published MEMBER DIRECTORY annually since 1875. Lists U.S. and Canadian nurserymen, by state or province including name, address, form of business, grower or wholesaler, and so forth. Lists the National Association of Plant Patent owners; garden centers; regional and foreign nursery associations.

American Horticultural Society.

DIRECTORY OF AMERICAN HORTICULTURE. Mt. Vernon, Va.: 1974. 119 p.

Lists major horticultural organizations with headquarters addresses; professional, semiprofessional, and trade; conservation; garden club associations.

Horticultural libraries, with location, coded by major subject area in collection. Interlibrary loan service indicated.

Plant societies, agricultural extension service offices, agricultural station plant introduction stations, by stage, keyed for type of horticultural project carried on; inspection stations; educational institutions which grant certificates, associate degrees, and bachelor's degrees; correspondence courses.

Other references include gardens and garden centers, by state and region.

International registration authorities listed by cultivar names.

### American Pomological Society

Publishes FRUIT VARIETIES JOURNAL, 1973-- . Quarterly. (Formerly FRUIT VARIETIES & HORTICULTURAL DIGEST, 1946-73.)

### California Date Growers' Association.

A date growers' cooperative harvesting and marketing organization.

### Date Growers' Institute

### The Mushroom Growers' Association

Publishes MUSHROOM JOURNAL. 1945-- . Monthly. Carries articles, literature lists, summaries of short courses, association news, and so forth.

### The Mushroom Institute

### United Fresh Fruit & Vegetable Association

Maintains a library.

Publishes educational booklets and materials to assist member growers and merchandisers in handling fresh produce for the market.

### Vinifera Wine Growers Association

Publishes THE VINIFERA WINE GROWERS JOURNAL. 1974-- .



## Reference Materials

---

Quarterly (three issues per year as of 1976). Carries articles, association news, research reports, book reviews, correspondence from members.

### Wine Institute

Publishes WINE INSTITUTE BULLETIN. Monthly.

Annually publishes statistics on grape and raisin production, utilization distribution, and other statistical information.

Maintains a library.

Part 4

AGRICULTURAL ENTERPRISES—LIVESTOCK



## Chapter 1

### ANIMAL SCIENCE AND LIVESTOCK MANAGEMENT

#### FARM ANIMAL MANAGEMENT

Acker, Duane. ANIMAL SCIENCE AND INDUSTRY. 2d ed. Englewood Cliffs, N.J.: Prentice-Hall, [1971]. 616 p. Illus., glossary.

An introductory survey of farm animals, their care and management for profit.

Focuses on marketing through various outlets: market news; cycles and prices; appraisal of animals by class and grade.

Anderson, Arthur Laurence, and Kiser, James J. INTRODUCTORY ANIMAL SCIENCE. Rev. ed. New York: Macmillan, [1963]. 800 p. Illus.

Reviews changes in the livestock industry in two preceding decades. From animal husbandry to animal science, changes have been effected through group action--science, technology, consumer diet, foreign trade, greater specialization in farming.

Functions of the livestock enterprise are listed on page 3.

Cole, H.H., and Ronning, Magnar, eds. ANIMAL AGRICULTURE: THE BIOLOGY OF DOMESTIC ANIMALS AND THEIR USE BY MAN. San Francisco: W.H. Freeman & Co., [1974]. 800 p. Illus.

The livestock industry in the United States and other parts of the world is reviewed. Gives the manager information on all aspects of animal agriculture.

Three chapters cover animal nutrition, nutritional value of feeds, metabolic conversion, and feed requirements for physiological activity of animals.

Dukes, Henry Hugh. DUKE'S PHYSIOLOGY OF DOMESTIC ANIMALS. Edited by Melvin J. Swenson. 8th ed. Ithaca, N.Y.: Comstock Publishing Associates, [1970]. 1,478 p. Illus., ports., tables, chapter biblios.

Although this book is designed for veterinary students, the information is valuable to those concerned with animal physiology.

Ensminger, M. Eugene. ANIMAL SCIENCE. 6th ed. Danville, Ill.: Interstate Printers & Publishers, [1969]. 1,253 p. Illus., tables, chapter biblios.

The business aspects of livestock production and the increasing responsibility of the manager are emphasized. Factors to consider in establishing the herd or flock as well as breed selection and its basis are discussed.

Appendixes include tables, list of breed registry associations, and breed magazines.

\_\_\_\_\_. THE STOCKMAN'S HANDBOOK. 4th ed. Danville, Ill.: Interstate Printers & Publishers, [1970]. 957 p. Illus., reading list.

A desk reference for managers in the modern livestock business.

Reference material on credit sources; livestock production; contract or custom services.

Esmay, Merle L. PRINCIPLES OF ANIMAL ENVIRONMENT: ENVIRONMENTAL ENGINEERING IN AGRICULTURE AND FOOD SERVICES. Westport, Conn.: AVI Publishing Co., 1969. 325 p. Illus., chapter biblios.

This book is about climate modification in structures for livestock and poultry. Covers effect on animals of heat, humidity, water vapor, ventilation, and air flow patterns.

Chapter 11: "Heat and Vapor Transmission in Buildings," pp. 197-216.

Chapter 12: "Heat and Vapor Production in Livestock and Poultry Structures," pp. 217-33.

Chapter 13: "Air Exchange in Livestock and Poultry Buildings," pp. 233-56.

FARM ANIMALS; A BASIC GUIDE TO THEIR HUSBANDRY. [London]: Hutchinson Publishing Group, [1968]. 298 p. Illus.

Principles of livestock farming for students and practicing farmers.

Sections cover the general structure and functions of animals, nutrient requirements, breeding, health management.

Hafez, E.S.E. ADAPTATION OF DOMESTIC ANIMALS. Philadelphia: Lea & Febiger, 1968. viii, 415 p. Illus., tables, glossary.

Traces various adaptations to environment for cattle, swine, sheep, goats, and poultry. These adaptations arise through changes in ecology, biology, and physiology.

Climatic research centers for the study of large domestic animals are listed by type, faculty, name, and location on page 391.

\_\_\_\_\_, ed. THE BEHAVIOR OF DOMESTIC ANIMALS. 2d ed. Baltimore: Williams & Wilkins Co., [1969]. 647 p. Illus., charts, tables, chapter biblios.

From scattered works, the editor brings into balanced relationship feeding, sexual and social aspects of animal behavior. Reviews ingestion, browsing, drinking; social organization; activity, daily and seasonal cycles; sexual and maternal behavior.

Hecht, Reuben W. LABOR USED TO PRODUCE LIVESTOCK; ESTIMATES BY STATES, 1959. Statistical Bulletin no. 336. Washington, D.C.: U.S. Department of Agriculture, Economic Research Service, 1963. 21 p. Tables.

A study of the man-hours used in livestock production. Covers cattle and calves, except milk cows; sheep; chickens, both layers and broilers. The hours used to produce hogs were calculated per hundred pounds.

These aggregates are published annually in FARM PRODUCTION AND EFFICIENCY, Statistical Bulletin no. 233.

LIVESTOCK: A SUCCESSFUL FARMING BOOK. 8th ed. [Des Moines, Iowa]: Meredith Corp., 1972. 115 p. Color illus. Paperbound.

An illustrated briefing of the health and management of beef, dairy cattle, and hogs. Includes success stories and ideas for managers.

There is a section on how to read feed test results, look at prices, and manage animal waste.

National Research Council. Committee on Physiological Effects of Environmental Factors on Animals. GUIDE TO ENVIRONMENTAL RESEARCH ON ANIMALS. Washington, D.C.: National Academy of Sciences, 1971. 374 p.

Report of studies of animals in relation to confined environment.

Chapter 4: "Animal Characteristics in Relation to Environmental Response," pp. 189-214, by L.C. Ulberg.

Chapter 5: "Environment and Physiopathology," pp. 215-45.

Chapter 6: "Design and Execution of Experiments Using Domestic Animals," pp. 246-66. Reports on a study which used cows in various capacity stalls to determine the thermal neutral zone for unacclimated cows and the effect of temperature on energy metabolism. A study of two chambers, six lactating cows in each, was conducted to evaluate the effects of temperature on lactation and related functions.

Park, Robert Donovan, et al. *ANIMAL HUSBANDRY*. 2d ed. London: Oxford University Press, 1970. 269 p. Illus.

Application of natural sciences to the care and management of farm livestock. Chapters are devoted individually to cattle, sheep, and pig husbandry.

Sims, John A., and Johnson, Leslie E. *ANIMALS IN THE AMERICAN ECONOMY*. Ames: Iowa State University Press, [1972]. viii, 228 p. Illus.

Designed to familiarize the reader with breeds of domestic animals that are important in the American economy. Dates of introduction, place of origin, distinguishing characteristics, performance traits, and so forth, are described. Includes cattle, swine, sheep and goats, poultry, and rabbits.

### LIVESTOCK BREEDING

*THE ARTIFICIAL INSEMINATION OF FARM ANIMALS*. 4th ed., rev. Edited by Enos J. Perry. New Brunswick, N.J.: Rutgers University Press, [1968]. 492 p. Illus.

Reviews history of artificial insemination of cattle in the United States from 1938. Chapters cover dairy cattle, buffaloes, sheep, goats, swine, poultry, and bees.

Chapters on the organization and management of artificial breeding program; freezing and shipping semen.

Bowman, John C. *AN INTRODUCTION TO ANIMAL BREEDING*. Institute of Biology Studies no. 46. London: Edward Arnold Co., [1974]. 76 p. Illus.

Discusses biological principles as a basis for selecting animals to meet management objectives. Brief review of genetics as it relates to animal selection. Covers inbreeding and crossbreeding.

Chapter 7, pp. 70-74: "Selection in Practice," describes a large-scale poultry breeding program. Illustrates text with a flowchart.

Briggs, Hilton Marshall. *MODERN BREEDS OF LIVESTOCK*. 3d ed. New York: Macmillan, [1969]. 733 p. Illus., periodical list.

A book for the manager interested in breeding purebred stock. Reviews current developments and changes in various breeds of livestock. Defines terms. Instructions on evaluation of a pedigree and on classes by breed for cattle, hogs, sheep and goats. Gives origins, foundation stock, and improvements for the various breeds.



Bundy, Clarence E., and Diggins, Ronald V. LIVESTOCK AND POULTRY. Englewood Cliffs, N.J. Prentice-Hall, 1968. vii, 723 p.

Chapters on selecting the breeding and/or feeding stock; feeding, buying, selling, and marketing; controlling disease and parasites in pork, beef, dairy, dual-purpose cattle, sheep, and poultry.

Contains a special chapter on reproduction, inheritance, and pedigrees.

Cole, H.H., and Cupps, P.T., eds. REPRODUCTION IN DOMESTIC ANIMALS. 2d ed. New York: Academic Press, [1969]. 657 p.

Influences of environment, nutrition, and disease on reproduction. Covers physiological aspects of artificial insemination.

Cook, Stanton A. REPRODUCTION, HEREDITY AND SEXUALITY. Belmont, Calif.: Wadsworth Publishing Co., [1964]. vi, 117 p. Glossary, reading list.

Reasons and mechanisms for the adaptation of organisms to a fluctuating environment.

Hafez, E.S.E., ed. REPRODUCTION IN FARM ANIMALS. 2d ed. Philadelphia: Lea & Febiger, 1968. 452 p. Illus., tables, glossary, reading list.

Third edition was reviewed in March 1975 issue of POULTRY SCIENCE, but book was not available for examination.

Study of reproduction of cattle, sheep, swine, poultry.

Lasley, John Foster. GENETICS OF LIVESTOCK IMPROVEMENT. 2d ed. Englewood Cliffs, N.J.: Prentice-Hall, [1972]. 446 p. Illus.

Includes an overview chapter on development of the livestock industry in the United States. Separate chapters on systems of breeding and selection in swine, beef cattle, sheep, and dairy cattle.

Lerner, I. Michael, and Donald, H.P. MODERN DEVELOPMENTS IN ANIMAL BREEDING. London and New York: Academic Press, 1966. xi, 294 p. Tables, reading list, author, subject indexes.

Animal breeding and its objectives in the social context of world hunger are reviewed. The theory and practice of improvement methods, breed associations, and the future of animal breeding are covered in detail.

Lush, Jay L. ANIMAL BREEDING PLANS. Ames: Iowa State University Press, 1970. viii, 443 p. Illus.

Methods for improving the heredity of farm animals, and the results to be expected from various breeding methods.

Includes chapter on history of herdbooks, and the beginnings of pedigree breeding and registry societies.

Rice, Victor Arthur, and Andress, F.N. BREEDING AND IMPROVEMENT OF FARM ANIMALS. 6th ed. New York: McGraw-Hill Book Co., [1967]. 491 p. Illus., tables, charts, chapter biblios.

This textbook reviews theories and practices in animal breeding.

Chapters 11-14 are on improving dairy, beef cattle, swine and sheep with sections on new breeds.

Appendix lists purebred livestock registry and performance associations for beef, dual-purpose cattle, dairy cattle, sheep, swine, goats.

### FEEDS, FEEDING AND NUTRITION OF LIVESTOCK

Cassard, Daniel W., and Juergenson, Elwood M. APPROVED PRACTICES IN FEEDS & FEEDING. Danville, Ill.: Interstate Printers & Publishers, [1971]. 445 p. Illus.

A comprehensive list of approved practices, and their application to livestock feeding.

Practices described have been tested in agricultural experiment stations.

Church, D.C., and Pond, W.G. BASIC ANIMAL NUTRITION AND FEEDING. Ithaca, N.Y.: Cornell University, Department of Animal Science, 1974. 300 p. Illus. Spiral-bound.

A handbook for the livestock manager. Part 1 covers nutrition in agriculture, analysis of nutrient classes, requirements for animals.

Part 2 gives the required nutrients--water, protein, and so forth.

Part 3 applies nutrition principles to feeding of agricultural animals.

COMMERCIAL USES OF WASTE AS ANIMAL FEED; WASTE RECYCLING AND CANADIAN AGRICULTURE. Edited by C. Pequegat. Manuscript prepared by A. Mates. Ottawa: Agricultural Economic Research Council of Canada, 1975. v, 253 p.

Proceedings of conference held 24-25 April 1975 in Toronto. The purpose was to bring together personnel representing research centers in Canada and abroad, commercial interests, regulatory bodies, and ultimate users. The discussions focused on the problems of re-

cycling animal waste in relation to other options.

"Processing Poultry Industry Wastes as Feed; the European Experience," pp. 86-105, by Robert Blair, cites trials in which poultry waste was used to reduce feeding costs for ruminants. Covers European legislation on animal waste.

Raymond Lancot, livestock producer and dairy farmer, describes his experiences using broiler litter as feed, "Poultry Waste in a Commercial Feeding Operation," pp. 120-25.

David N. Mowat's paper, "The Potential of Crop Residues [oat, straw, corn stalks] as Commercial Animal Feed," has a section on processing methods. He recommends fine grinding of residue to increase voluntary intake. Research in United States and other countries on crop waste as animal feed is cited, page 141.

Crampton, Earle Wilcox, and Harris, L.E. APPLIED ANIMAL NUTRITION; THE USE OF FEEDSTUFFS IN THE FORMULATION OF LIVESTOCK RATIONS. 2d ed. San Francisco: W.H. Freeman & Co., [1969]. 777 p. Illus., tables.

History and development of the National Research Council nomenclature for feeds; nutritional requirements of animals; nutritional characteristics of common feeds; ration formulation.

Chapter 22: "Feedstuffs Control and Legislation, United States and Canada." Copy of the "Uniform State Feed Bill" is on page 443.

Cuthbertson, David P., ed. NUTRITION OF ANIMALS OF AGRICULTURAL IMPORTANCE. 2 vols. Oxford: Pergamon Press, [1969]. 1,443 p. Author, subject indexes.

Volumes 17 and 18 in the INTERNATIONAL ENCYCLOPEDIA OF FOOD AND NUTRITION.

Part 1, volume 17: THE SCIENCE OF NUTRITION OF FARM LIVESTOCK.

Part 2, volume 18: ASSESSMENT OF AND FACTORS AFFECTING REQUIREMENTS OF FARM LIVESTOCK.

FEED PRODUCTION HANDBOOK. Kansas City, Mo.: Feed Production School, 1961. 288 p. Illus., charts.

Aid to personnel in feed production, the feed formula industry, and feed purchasing.

Hafez, E.S.E., and Dyer, I.A. ANIMAL GROWTH AND NUTRITION. Philadelphia: Lea & Febiger, 1969. ix, 402 p. Illus., tables.

Combines physiochemical concepts of growth and the nutritional requirements that control it for farm mammals and poultry.

For the veterinary student and managers who are concerned with care of farm animals.

Hodges, Earl F. CONSUMPTION OF FEED BY LIVESTOCK, 1940-1950. Production Research Report no. 79. Washington, D.C.: U.S. Department of Agriculture, Economic Research Service, Farm Production Economics Division, 1964. 94 p. Tables, diags.

Study covers consumption of feed by specified kinds of livestock; types of feed--concentrates, grains, harvested roughage, pasture and grazing, and all other roughages. Statistics also cover number of livestock, productive livestock units, and deficit in digestible protein for all livestock.

Jennings, Joseph Brian. FEEDING, DIGESTION AND ASSIMILATION IN ANIMALS. Oxford: Pergamon Press, 1965. 228 p. Illus., reading list.

This book approaches animal nutrition from the zoological viewpoint. Focuses on the structure and organs concerned with digestion and assimilation of food. The variety of alimentary systems found in animals, the fundamental process of digestion, and the varieties of foods obtainable from the environment are discussed.

LIQUID SUPPLEMENTS FOR LIVESTOCK FEEDING. New York: Charles Pfizer & Co., Livestock Division, [1969]. 91 p.

Lists trademarks and trade names of liquid feeds; describes each feed.

Section devoted to species and levels of feeding for feedlot cattle, range cattle, dairy cattle, and sheep.

Maynard, Leonard A., and Loosli, John K. ANIMAL NUTRITION. 6th ed. New York: McGraw-Hill Book Co., 1969. x, 613 p. Illus.

Presents the principles of nutrition and their application to feeding practices. Describes digestive processes of different species; metabolism of nutrients; nutrient requirements for animal growth and activity.

Morrison, Frank B. FEEDS AND FEEDING: A HANDBOOK FOR THE STUDENT AND STOCKMAN. 9th ed., abridged. Clinton, Iowa: Morrison Publishing Co., 1958. vi, 1,165 p. Tables.

Chapters on fundamentals of animal nutrition and feeding stuffs--hay, legumes, silage, grains, and so forth. The feeding of farm animals is covered in individual chapters on dairy cows, sheep, swine, poultry.

Appendix, table 1: "Average Composition and Digestible Nutrients," pp. 1000-1069.

National Research Council. ALTERNATIVE SOURCES OF PROTEIN FOR ANIMAL PRODUCTION. Washington, D.C.: National Academy of Sciences, 1973. viii, 184 p. Paperbound.

Proceedings of a symposium held jointly by Virginia Polytechnic Institute and Virginia State University at Blacksburg, 31 July 1972.

Papers discuss enrichment of protein from known protein-rich materials--cereals, meat and blood byproducts, oilseeds. Others cover high-protein meal from such new sources as sunflower seed, rapeseed, sesame, coconut, and safflower.

"Recycling Animal Wastes as Protein Sources," pp. 146-73, by L.W. Smith, includes tables and a list of references.

\_\_\_\_\_. ATLAS OF NUTRITIONAL DATA ON UNITED STATES AND CANADIAN FEEDS. Washington, D.C.: National Academy of Sciences, 1971. 788 p. Glossary.

Data on 6,152 feeds including common name, scientific name, reference codes, country, composition as fed and as dry. Includes every feed that has been used in North America.

National Research Council. Committee on Animal Nutrition. EFFECT OF PROCESSING ON THE NUTRITIONAL VALUE OF FEEDS. Washington, D.C.: National Academy of Sciences, 1973. vii, 494 p.

Proceedings of a symposium held in Gainesville, Florida, 11-13 January 1972, sponsored by the National Research Council and both the Center for Tropical Agriculture and the Department of Animal Science, University of Florida.

Papers cover chemical and nutritional changes caused by heat treatment; effects of fermentation, pelleting, and crumbling on feeds; methods for destroying natural toxins; effects of processing on molds, salmonella, and so forth. The value of calcium, potassium, and magnesium supplements are also covered.

\_\_\_\_\_. UNITED STATES-CANADIAN TABLES OF FEED COMPOSITION: NUTRITIONAL DATA FOR UNITED STATES AND CANADIAN FEEDS. Washington, D.C.: National Academy of Sciences, 1969. 92 p. Tables.

Guide for use of feed composition tables, pp. 7-11. Includes 400 feeds in everyday usage.

\_\_\_\_\_. **USE OF DRUGS IN ANIMAL FEEDS.** Washington, D.C.: National Academy of Sciences, 1969. 407 p.

Proceedings of a second symposium to which the Committee invited specialists to contribute papers. Papers are on problems of and need for research on using drugs in feeds; evaluation of the drugs; regulation and control principles; influence of drugs used in feeds on the ecology.

List of participants, pages 405-7.

**SPECIFIC NUTRIENTS IN ANIMAL NUTRITION: ENERGY, PROTEIN, MINERAL AND VITAMIN USE BY MEAT AND DAIRY ANIMALS.** Atlanta, Ga.: Southern Regional Education Board, 1970. 221 p. Illus.

Report of an institute held September 1969 in Athens, Georgia. Purpose of the institute was to assist teachers and researchers in broadening their knowledge of animal nutrition.

Stevenson, W.A. **SEAWEED IN AGRICULTURE AND HORTICULTURE.** Preface and update by Ernest Booth. 3d ed. Pauma Valley, Calif.: Bargyla & Cylver Rateaver, 1974. 242 p. Illus.

Chapter 10: "Seaweed Meal as a Feedingstuff," pp. 134-69. Describes research on and results of using seaweed to feed sheep, dairy cows, beef cattle, pigs, and goats. Tables show vitamins and trace elements in seaweed.

Appendix B: "Recommended Rations for Stock," pp. 210-13.

Underwood, E.J. **THE MINERAL NUTRITION OF LIVESTOCK.** Rome: Food and Agriculture Organization of the United Nations, 1966. 237 p. Illus.

Prepared by the Commonwealth Agricultural Bureaux of Great Britain.

### LIVESTOCK HEALTH

Dykstra, R.R. **ANIMAL SANITATION AND DISEASE CONTROL.** 6th ed. Danville, Ill.: Interstate Printers & Publishers, [1961]. 882 p. Illus., tables.

Emphasis is on preventing animal ailments by proper housing with adequate air, ventilation, temperature control; proper feed; manure disposal. Provides background in anatomy and physiology. Covers management of disease control. Chapters on sanitation bureaus and the veterinarian.

Galloway, Joseph H. **FARM ANIMAL HEALTH AND DISEASE CONTROL.** Philadelphia: Lea & Febiger, 1972. viii, 373 p. Illus., reading list.

Gives briefs on agencies concerned with controlling diseases of

economic and public health importance. Discusses the diseases of economic importance, selected diseases controlled by tactical procedures, and the exotic diseases which pose a threat to U.S. livestock.

Covers plants, minerals, and insecticides; also internal and external parasites.

Merchant, I.A., and Barner, Ralph H. AN OUTLINE OF INFECTIOUS DISEASES OF DOMESTIC ANIMALS. 3d ed. Ames: Iowa State University Press, [1964]. xi, 478 p.

In outline, describes all important diseases affecting farm animals, except poultry and small animals. Covers symptoms, pathology, diagnosis, prognosis, treatment, prophylaxis, government regulation. Of value to the livestock manager in recognizing both symptoms and need for veterinary aid.

Miller, William Christopher, and West, Geoffrey P. ENCYCLOPEDIA OF ANIMAL CARE. 10th ed. Baltimore: Williams & Wilkins Co., 1972. viii, 1,026 p. Illus.

For the farmer and stock owner responsible for the care of domestic animals. Diseases are described--causes, symptoms, treatment, prevention measures. Helps the stockman understand when the veterinarian must be called.

Seiden, Rudolph, in association with W. James Gough. LIVESTOCK HEALTH ENCYCLOPEDIA. 2d ed. New York: Springer Publishing Co., [1961]. x, 628 p. Illus., maps, reading list.

Presents information in summary form for quick reference by livestock producers. Gives simple definition of scientific terms, synonyms of disease names, remedies and dosages as suggested in official literature.

The third edition, 1968, edited by W. James Gough, was not available for examination.

## LIVESTOCK SERVICES

LIVESTOCK TRUCKING SERVICES: QUALITY, ADEQUACY, AND SHIPMENT PATTERNS. Agricultural Economic Report no. 312. Washington, D.C.: U.S. Department of Agriculture, 1975. 15 p.

Report on for-hire truck service experiences of shippers surveyed in 1972. Includes channels through which shippers communicate with truckers; watering practices in transit; condition of animals after transport, weight and death loss.



McCoy, John Henry. LIVESTOCK AND MEAT MARKETING. Westport, Conn.: AVI Publishing Co., 1972. iv, 465 p. Illus., charts, tables.

Reviews important economic aspects of the livestock industry and its relationship with other industries.

Chapter 12: "Market Intelligence," pp. 317-35, describes collection agency operations in various types of markets. Reviews market news sources. Lists major releases, distribution dates, farm and trade magazines, producer associations.

Chapter 13: "Regulatory and Inspection Measures," pp. 336-52.

Youtz, H.G., and Carlson, A.C. JUDGING LIVESTOCK, DAIRY CATTLE, POULTRY AND CROPS. 2d ed. Englewood Cliffs, N.J.: Prentice-Hall, 1970. 207 p. Illus.

Practical application for farmers and ranchers on judging and grading livestock, with breed characteristics for hogs, sheep, beef cattle. Part 2 is devoted to dairy cattle judging; part 3 to poultry.



## Chapter 2

### BEEF CATTLE MANAGEMENT

A COMPLETE FORAGE PLAN FOR WISCONSIN BEEF CATTLE. Publication A-2550. Madison: University of Wisconsin Agricultural Experiment Station, 1973. 26 p. Illus.

Advocates development of a forage plan for the farmer's beef enterprise.

CROSSBREEDING BEEF CATTLE, SERIES TWO. Edited by Marvin Koger, Tony J. Cunha, and Alvin C. Warnick. Gainesville: University of Florida Press, 1973]. xi, 459 p. Illus.

Summarizes and reviews ten years of research in papers presented at the annual Beef Cattle Short Course 5-8 May 1971, University of Florida. Papers include statistics analyzing completed programs, but most of the information deals with ongoing projects.

Davis, R.L., and Edgerley, W.F. FEEDLOT AND RANGE MANAGEMENT. Farmer's Bulletin no. 1584. Rev. ed. Washington, D.C.: U.S. Department of Agriculture, 1963. 19 p. Illus., diags.

Covers provision of shelters, back rubbers, cattle guards for pastures and range. Describes and illustrates equipment for the corral, such as fences, scales, and chutes.

Gives plans for arrangement of feedlot, location of silo and feeding equipment.

The August 1974 revision of this bulletin was not available for examination.

Diggins, Ronald V., and Bundy, Clarence E. BEEF PRODUCTION. 3d ed. Englewood Cliffs, N.J.: Prentice-Hall, 1971]. 276 p. Illus., charts.

Essential management information on beef production for the breeder. Includes chapters on classes and grades of feeder cattle, as well as feeding and management of stockers and feeder cattle.

Dyer, Irwin A., and O'Mary, C.C., eds. THE FEEDLOT. Philadelphia: Lea & Febiger, 1972. ix, 224 p. Illus., charts.

Basic and essential information for the cattle-finishing operation covered by fifteen contributors.

Chapter 4: "Feedlot Design and Management," pp. 34-44, by C. Jim Elam and Robert B. Grainger.

Ensminger, M. Eugene. BEEF CATTLE SCIENCE. 4th ed. Danville, Ill.: Interstate Printers & Publishers, [1968]. x, 1,020 p. Illus.

On basis of recent technological developments, the author predicts further adaptations and changes in distribution in the cattle business.

Chapter 9: "Beef Cattle Management," pp. 406-42, covers all aspects of physical care of the animals and focuses attention on pastures for various climates.

Chapter 10: "Range Cattle Management," pp. 443-77, covers the herd in relation to capacity of range, types of vegetation, grazing systems, year-round care of range cattle. Discusses grazing on publicly owned lands, agencies administering public lands.

Fowler, Stewart H. BEEF PRODUCTION IN THE SOUTH. Danville, Ill.: Interstate Printers & Publishers, [1969]. 870 p. Illus., maps.

The growth of the southern beef business, causes for increase, and problems related to this region are explained.

Chapter 13, "Pastures, Rangelands, and Forages," pp. 431-92, covers all grazing areas in the country. Includes section on establishing and maintaining good pastures and managing the grazing system.

Problems of Palmetto in the coastal plain, pp. 454-58. Map, p. 459, shows range types of southern pine forest; "Pasture Plants for the South," p. 479. Figure 13-32, p. 482, shows legumes and grasses by region of adoption.

Goodwin, John W., and Crow, J. Richard. THE INTERREGIONAL STRUCTURE OF THE AMERICAN BEEF INDUSTRY IN 1975 AND 1980. Technical Bulletin no. B-708. Stillwater: Oklahoma State University Agricultural Experiment Station, 1973. 55 p. Illus.

Reviews changes in the beef industry since 1960, due to increased consumption and shifts in the producing areas. Suggests changes which might be expected in 1975 and 1980 from competition among producing regions for markets.

Hair, Jake A.; Barker, R.W.; and Cookley, Jerry. CONTROL OF SUMMER TICKS IN BEEF CATTLE. Extension Facts no. 7006. Stillwater: Oklahoma

State University Cooperative Extension Service, 1974. 3 p. Illus.

Identifies and describes four species of ticks encountered by Oklahoma cattlemen: Gulf Coast, Lone Star, and Spinose ear ticks; American dog tick. Guide to control of and treatment for each species of tick is included.

Heinemann, W.W. SPENT HOPS, CORN SILAGE, AND ALFALFA HAY AND ALFALFA STEMS IN BEEF CATTLE NUTRITION. Bulletin no. 795. Pullman: Washington State University Extension Service, 1974. 5 p.

Not available for examination.

Hume, A. BEEF FINISHING. Bulletin no. 8. Edinburgh: East of Scotland, College of Agriculture, Economics and Management Department, 1974. 86 p. Illus.

Summarizes ten beef finishing systems.

Juergenson, Elwood M. APPROVED PRACTICES IN BEEF CATTLE PRODUCTION. 4th ed. Danville, Ill.: Interstate Printers & Publishers, [1974]. 454 p. Illus., glossary.

Comprehensive discussion of approved practices in management of the beef enterprise tested by agricultural experiment stations, Department of Agriculture, and successful farmers. Summary list of chapters in appendix C, pages 421-33.

"Essential Skills for Cattlemen," p. 407.

National Research Council. Committee on Animal Nutrition. NUTRIENT REQUIREMENTS OF BEEF CATTLE. 4th ed., rev. Washington, D.C.: National Academy of Sciences, 1970. v, 55 p.

Nomenclature of feeds adopted by U.S. Committee on Animal Nutrition and the Canadian National Committee on Animal Nutrition.

Tables list major nutrient requirements of beef cattle; vitamins and mineral supplements; example of cattle ration. Discusses use of feed additives and antibiotics in finishing rations. Table 7: "Composition of Feeds Commonly Used in Beef Cattle Rations."

Neumann, A.L., and Snapp, Roscoe R. BEEF CATTLE. 6th ed. New York: John Wiley & Sons, [1969]. x, 767 p. Illus.

Textbook on all aspects of beef cattle enterprise with sections on management of breeding herd in winter and in summer. Three chapters describe the cow-calf program. Twelve chapters focus on the stocking and finishing of beef cattle for market.

Nix, James E. "Grain-fed Versus Grass-Fed Beef Production." LIVESTOCK AND MEAT SITUATION (April 1975): 37-40.

Includes tables. Cites references.

O'Mary, C.C., and Dyer, Irwin A. COMMERCIAL BEEF CATTLE PRODUCTION. Philadelphia: Lea & Febiger, [1972]. ix, 393 p. Illus., maps, charts.

First nine chapters in this text are on planning a beef cattle operation or improving an existing one. Recommends establishing pastures and housing before buying cattle. Shows how to start breeding stock and plan a breeding program.

Chapter 21: "Owner-Manager Relationship in Beef Cattle Operations," pp. 352-59 by Albert M. Lane, covers the responsibilities, qualifications, and compensation of the cattle manager employed by an owner.

Oppenheimer, Harold L. COWBOY ARITHMETIC; CATTLE AS AN INVESTMENT. 2d ed. Danville, Ill.: Interstate Printers & Publishers, 226 p. Illus., ports., reading list.

Third edition, 1971, was not available for examination.

Prepared during the mid-1960s in a fluctuating cattle market. Reviews ranching as a business, with problems of financing and market cycles and prices.

Covers absentee landowners and/or animal owners.

Chapter 18: "Tricks of the Trade," pp. 179-203, is on purchases, feed, the ranch, cattle handling, inspection regulations.

Lists sources of market reports and useful news media, pages 171-78.

Preston, T.R., and Willis, M.B. INTENSIVE BEEF PRODUCTION. Oxford: Pergamon Press, [1970]. 567 p. Illus., pls. (part color), maps, reading list, glossary.

The systems of growing and/or feeding cattle in the United States and the United Kingdom are described in detail. Market demands for carcass quality, the genetic improvement programs, digestion and feed conversion are covered with other management essentials.

The second edition, 1974, was not available for examination.

Putnam, Paul A., and Warwick, Everett J. THE FARM BEEF HERD. Farmer's Bulletin no. 2126. Rev. ed. Washington, D.C.: U.S. Department of Agriculture, 1974. 16 p. Illus.

This advisory bulletin points out to the full-time or part-time beef enterprise manager the importance of location, cost of land, per-

centage of cows calving each year, crop yields, and prices received for cattle marketed to the net return on a herd.

The brief, well-illustrated text covers systems of farm beef production; size of herd; expected production; selection of stock; herd sire; females. Includes sample form for cow performance record.

Smith, R.S. STRAW AND CONCENTRATE DIETS FOR INTENSIVE BEEF FINISHING. Bulletin no. 9. Edinburgh: East of Scotland, College of Agriculture, Economics and Management Department, 1974. 23 p. Illus.

Reports on a cattle-finishing study using barley diet diluted with straw. Although findings showed no apparent cost advantage, some feeding behavior aspects were observed. Particle size seemed important. Ground straw was preferred to chopped straw in the diluted diet.

Taylor, Robert E. "Management of Beef Cattle." In ANIMAL AGRICULTURE, edited by H.H. Cole and Magnar Ronning, pp. 549-62. San Francisco: W.H. Freeman & Co., 1974.

Wolfenstine, Manfred R. THE MANUAL OF BRANDS AND MARKS. Introduction by Ramon F. Adams. Norman: University of Oklahoma Press, [1970]. 463 p. Illus., glossary, list of abbreviations, reading list, index of plates and figures.

On brands and branding for cattle. Reviews history; describes and illustrates designs of marks and brands, branding implements, methods of use. Chapters on registration of government and state brands included.



## Chapter 3

### DAIRY CATTLE MANAGEMENT

#### DAIRY FARMING

Baker, Lyle A. BOVINE HEALTH PROGRAM, WITH A SPECIAL CHAPTER ON CHELATION. [Cleveland: United Publishing Corp., 1968.] vii, 208 p. Illus.

Although aimed at the veterinarian, the text stresses sound herd management and nutritional procedures that the herd owner must practice.

Chapter on "Chelation" by John J. Miller.

Becker, Raymond B. DAIRY CATTLE BREEDS. Gainesville: University of Florida Press, 1973. 566 p. Illus., photos, tables, name, subject indexes.

Origins of genus *Bos* and domestication. Improvement and development of breeds, with chapters on various dairy cattle breeds of Europe, Great Britain, and the United States. Summary chapter.

Buxton, Boyd M., and Lomberg, Michael L. CAN MODERN DAIRY FARMS COMPETE FOR HIRED LABOR? Station Bulletin no. 505. Minneapolis: University of Minnesota, Agricultural Experiment Station, 1972. 25 p. Illus.

Presents an "on-paper" study of a modern dairy farm with labor-efficient technology from engineering and actual farm data. Reviews nonfarm job alternatives--wages, fringe benefits. Evaluates the economics of hiring labor on a large modern dairy farm and offers ways in which dairymen can be competitive with nonfarm jobs for the same available labor.

Coletti, Anthony. HANDBOOK FOR DAIRYMEN. Ames: Iowa State University Press, 1963. 309 p. Illus.

Practical aspects of dairy cattle management for dairy farmers. Stresses safety of operator and maintenance of livestock well-being.

In addition to breeds, feeds, pasture, housing problems, this book includes practical hints on care and management of dairy calves

and dairy heifers, the herd sire, breeding problems. Gives suggestions on fencing, silage odor, moisture in hay.

Diggins, Ronald V., and Bundy, Clarence E. DAIRY PRODUCTION. 3d ed. Englewood Cliffs, N.J.: Prentice-Hall, 1969. 304 p. Illus.

This text covers the information and technology basic to dairy production. Chapter on management of dairy cattle discusses reproduction, inheritance, and breeding systems.

Ensminger, M. Eugene. DAIRY CATTLE SCIENCE. Danville, Ill.: Interstate Printers & Publishers, [1971]. 538 p. Illus.

A reference text for dairymen. Four chapters on feed and feeding aspects and a comprehensive chapter on dairy buildings, equipment, bedding, and manure handling.

Chapter 16: "Business Aspects of Dairying," pp. 457-99, has information on the manager's job, records, accounts, budgets, computer use. Includes examples of heifer-rental contracts, illustrated by table 16-8: "How to Calculate Annual Cow Rental." There is also a table: "Income and Costs of Owning vs. Renting a Cow." Cow pools are described, pp. 489-91. Another helpful business table: "Factors Determining the Kind of Livestock Best Suited to the Individual Farm," p. 492.

Appendix, section 4: "Breed Registry Associations," p. 511. Appendix, section 5: "Dairy Magazines," by breed, with publisher and address, pp. 512-13.

Fallert, Richard F., and Lough, Harold W. BASE PLANS IN U.S. DAIRY MARKETS; DEVELOPMENT, STATUS AND POTENTIAL. Marketing Research Report no. 957. Washington, D.C.: U.S. Department of Agriculture, Economic Research Service, [1972]. v, 35 p. Illus., charts, maps, reading list.

Purpose of this study is to give a brief background of milk supply management plans, types currently in existence, and their potential. Scope of the report includes base plans: operated by producers cooperatives, provided by state milk control agencies, and controlled under federal milk orders.

Options open to cooperatives are listed on page 32. Appendix: "Definition of Terms," p. 33.

Foley, Richard C., Sr., ed. DAIRY CATTLE; PRINCIPLES, PRACTICES, PROBLEMS, PROFITS. Philadelphia: Lea & Febiger, 1972. 703 p. Illus., chapter biblios.

Textbook on dairy herd management stresses fundamental principles which make certain practices more desirable than others. Useful in all fifty states and in major dairy areas of the world.



Chapter 6: "Herd and Farm Records," pp. 93-99.

Chapter 15: "Computer-Formulated Rations and Feeding for Maximum Profit," pp. 269-84.

Chapter 19: "Management Problems Associated with Reproduction," pp. 333-51.

IMPACT OF DAIRY IMPORTS ON THE UNITED STATES DAIRY INDUSTRY. Agricultural Economic Report no. 278. Washington, D.C.: U.S. Department of Agriculture, 1975. 77 p.

Presents three trade alternatives for the U.S. dairy industry in relation to import quotas and price supports.

Judkins, Henry Forest, and Keener, Harry A. MILK PRODUCTION AND PROCESSING, AN UP-TO-DATE INTRODUCTION TO THE DAIRY INDUSTRY, COVERING BOTH THE PRODUCTION AND PROCESSING OF MILK. New York: John Wiley & Sons, [1960]. viii, 452 p. Illus.

A broad view of the dairy business; various breeds of cows; feeding and housing; herd records; health maintenance.

Appendix has dairy cow unified scorecard; unified scorecard for the dairy bull; daily nutrient requirements of dairy cattle, with feeding tables.

Juergenson, Elwood M., and Mortenson, W.P. APPROVED PRACTICES IN DAIRYING. 3d ed. Danville, Ill.: Interstate Printers & Publishers, [1972]. 353 p. Illus., glossary.

Furnishes information on activities which involve approved practices and how they should be maintained on the dairy farm. Useful to dairymen and to farmers considering a dairy enterprise.

Thorough coverage of designs for one- and two-story dairy barns. Factors to consider in barn arrangement to save labor and provide maximum comfort for the cows. Functional interiors planned for milking, loafing, and bedding areas are described and illustrated.

Appendix A lists addresses of national and international dairy associations. Appendix B gives outlines of chapters in the book, as a summary.

Lamond, D.R., and Campbell, E.A. DAIRY CATTLE HUSBANDRY. Rev. ed. Sydney: Angus & Robertson Pty., [1968]. 335 p. Illus., tables.

"Essential reading" for the dairy farmer or extension worker. Section I covers the Australian dairy industry. The other five sections are about the cow, milk production, and so forth.

Milk and Dairy Products Technical Advisory Commission. Great Britain. DAIRY FLOORS. London: H.M. Stationery Office, 1967. 51 p. Illus., reading list, glossary.

This bulletin contains information on design of dairy floors, illustrated by drawings. Shows the rising ramp structural base. Lists and discusses various types of flooring materials. Recommends a maintenance program for care and repair of dairy floors.

Appendixes have instructions for making and laying concrete and for preventing tile lifting.

Moody, E.G., and Huber, J.T. "Management of Dairy Cattle and Other Milk-Producing Animals." In ANIMAL AGRICULTURE, edited by H.H. Cole and Magnar Ronning, pp. 563-78. San Francisco: W.H. Freeman & Co., 1974.

Porter, A.R.; Sims, J.A.; and Foreman, C.F. DAIRY CATTLE IN AMERICAN AGRICULTURE. Ames: Iowa State University Press, [1968]. x, 328 p. Illus.

For owners of commercial herds as well as those interested primarily in registered cattle. Reviews and surveys various economic, geographic, and climatic influences upon the development of dairy cattle.

In chapter 3, pp. 25-31, a table shows "Characteristics of Breeds in the United States."

Information on dairy organizations is in chapter 5: "Formation of Breed Registry Organizations," pp. 42-56, and in chapter 15: "Other Groups Aiding Dairy Cattle Development," pp. 272-79.

Russell, Kenneth Norton. THE PRINCIPLES OF DAIRY FARMING. 6th ed. Revised by Stephen Williams. Ipswich, England: Farming Press (Books), [1972]. 263 p. Illus., tables, charts.

Combines dairy science and techniques of herd management in an interpretation for the farmer. Planning the dairy operation to suit size of farm; cropping policies; cost of feed crops; and best crops to grow are covered.

Appendixes have breed comparisons according to milk yields. Calculations for estimating weight of silo contents, stock, and so forth; analysis and feeding value of compound feeds are included.

Willet, G.S.; Howard, W.T.; and Weigle, R.N. GUIDELINES FOR ANALYZING THE DAIRY FARM BUSINESS. Publication A-2504. Madison: University of Wisconsin, Cooperative Extension Program, [1973]. 24 p. Illus.

A step-by-step guide for analyzing a dairy farm business. Two case farms, A and B, are used for illustration, with records for B farm, before analysis, and records for A farm before and after analysis for trouble-shooting.

Wing, James M. DAIRY CATTLE MANAGEMENT: PRINCIPLES AND APPLICATIONS. New York: Van Nostrand Reinhold Co., [1963]. 366 p. Illus., tables.

Fundamentals of dairy business are followed by reference aids useful to workers in the industry.

Methods of production testing; calving and drying off; dates based on average gestation periods of 282 days; age conversion factors for 305-day production periods; number of milkings; age, weight, height, and chest girth standards for four breeds are among the informative references.

### DAIRY CATTLE NUTRITION AND FEEDING

McCullough, Marshall E. OPTIMUM FEEDING OF DAIRY ANIMALS FOR MEAT AND MILK. Charts and illustrations by George P. Joiner. Athens: University of Georgia Press, [1969]. 228 p.

The second edition, 1973, was not available for examination.

Management of feeding practice, nutrition, and rations for milk production are established.

Chapter 3: "Feedstuffs--The Tools of Nutrition," pp. 30-63, covers forages, hay, silage, concentrates.

Chapter 4: "The Rumen and Its Use in Nutrition."

National Research Council. Committee on Animal Nutrition. NUTRIENT REQUIREMENTS OF DAIRY CATTLE. 4th ed., rev. Washington, D.C.: National Academy of Sciences, 1971. vi, 54 p. Tables, reading list.

Useful information for dairy farmers and others. Tables include recommendations for different breeds; daily nutrient requirements for milk production; average composition of feeds commonly used in dairy cattle rations.

Reaves, Paul M., and Henderson, H.O. DAIRY CATTLE FEEDING AND MANAGEMENT. 5th ed. New York: John Wiley & Sons, [1963]. vii, 448 p. Illus.

This book brings together research results in feeding, feeding methods, levels of feeding, as well as developments in housing for cattle and milk handling.

Separate chapters are on dairy farm business and the purebred dairy cattle business.

Utley, P.B., and McCormick, W.C. FEEDING COTTONSEED MEAL AND A MIXTURE CONTAINING BUIRET AS SUPPLEMENTS FOR WINTERING BEEF COWS AND HEIFERS. Station Research Report no. 176. Athens: University

of Georgia Agricultural Extension Station, 1973. 7 p.

Report of feeding trials at the Coastal Plains Station, Tifton, Georgia.

### THE FLUID MILK INDUSTRY

"The Fluid Milk Industry." In MARKET STRUCTURE OF THE AGRICULTURAL INDUSTRIES, edited by John R. Moore, pp. 102-22. Ames: Iowa State University Press, 1966.

Henderson, James Lloyd. THE FLUID MILK INDUSTRY. 3d ed. Westport, Conn.: AVI Publishing Co., 1971. 677 p. Illus., tables.

Background and trends in the industry, problems, and conditions are discussed.

Chapter 7: "Sanitary Dairy Farm Buildings," pp. 150-77, advises on construction and arrangement with floor-plan illustrations. Stall dimensions for different dairy cow breeds are recommended.

Chapter 18 covers cooperative marketing associations and reviews the federal Milk Order Marketing program.

Manchester, Alden Coe. THE STRUCTURE OF THE FLUID MILK MARKETS; TWO DECADES OF CHANGE. Agricultural Economic Report no. 137. Washington, D.C.: U.S. Department of Agriculture, 1968. iv, 51 p. Illus., maps, tables.

The market structure as of 1965 data, numbers of producers, types of handling fluid milk, market shares, and types of markets.

Spencer, Leland, and Blanford, Charles J. AN ECONOMIC HISTORY OF MILK MARKETING AND PRICING: A CLASSIFIED BIBLIOGRAPHY WITH REVIEWS OF LISTED PUBLICATIONS, 1840-1970. Columbus, Ohio: Grid, 1973. 978 p.

This study was developed under a grant from the Dairy Marketing Research Fund, supported by the dairy industry in the New York-New Jersey area. Purpose of the survey was to trace the evolution of the milk-pricing system during the last century, with special attention to New York and New Jersey. Some pluses in this report are the historical details of the sources searched.

SUPPLEMENT TO MARKET STRUCTURE, INSTITUTIONS, AND PERFORMANCE OF THE FLUID MILK INDUSTRY. Agricultural Economic Report no. 248. Washington, D.C.: U.S. Department of Agriculture, 1974. 147 p.

Structural characteristics, marketing margins, and prices presented for individual markets.

## Chapter 4

### SWINE PRODUCTION MANAGEMENT

#### SWINE PRODUCTION

Baker, James K., and Juergenson, Elwood M. APPROVED PRACTICES IN SWINE PRODUCTION. [5th ed.] Danville, Ill.: Interstate Printers & Publishers, [1971]. 432 p. Illus.

Full coverage of activities in swine production, involving practices approved by both state agricultural research experiment stations and successful farmers. Appendix A has outlines based on each chapter.

Chapter 10: "Butchering and Curing Pork on the Farm," pp. 363-404, adds a farm homestead highlight.

Appendix B: "Some Sources of Information for Swinemen," lists breed and allied organizations, and useful publications.

Brevik, Ted J. MORE PROFIT FROM PIGS. Rev. ed. Madison: Wisconsin University Agricultural Experiment Station, 1974. 63 p. Illus.

Plans for marketing quality hogs and pork: resources required for three-hog production system, labor needed, housing, breeding program, swine health.

Discusses feed and nutritional requirements per sow on the two-litter system, and per-pig during nursery stage.

Includes two budgets: one based on sow and two litters to market; the other, on sow and two litters to weaning of feeder pigs.

Davidson, Hamish Reid, assisted by W.E. Coey. THE PRODUCTION AND MARKETING OF PIGS. 3d ed. [London]: Longman Group, [1966]. 531 p. Illus.

A practical book for the pig producer, covering all aspects of the industry.

Chapter 31: "Equipment," pp. 476-88, discusses fencing, tethering,

fold units; watering appliances; dry and self-feeders; service crates; boilers and mixers for feed; veterinary supplies.

Chapter 32: "Transport," pp. 489-95, is on loading trailers, short- and long-distance hauling of pigs to market.

W.E. Coey assisted the author with chapters 7 and 12 on feeding and balanced rations. Coey has expertise in judging pig carcasses for consumer requirements.

EFFECTS OF CHANGES IN VERTICAL COORDINATION ON PORK PRODUCTION AND PRICES. Agricultural Economic Report no. 303. Washington, D.C.: U.S. Department of Agriculture, 1975. 23 p. Illus., tables, charts.

A projection of the performance of the hog industry, under existing vertical coordination structure, from 1973 through 1985.

Seven alternative situations are introduced into the model, and these results are simulated over the same projection period.

Ensminger, M. Eugene. SWINE SCIENCE. 3d ed. Danville, Ill.: Interstate Printers & Publishers, [1961]. ix, 692 p. Illus.

New developments in swine industry are covered in this edition. The central versus the farm system, manure conservation versus manure disposal, artificial insemination, and confinement rearing are among the issues discussed.

Other chapters on swine management cover pasture, with a regional table of pasture crops for swine. There is a chapter on selecting, fitting, and showing swine in agricultural shows.

Appendix 9: "Automation in the Swine Industry," pp. 671-75, with section on integration in the industry.

Jensen, A.H. "The Science and Husbandry of Swine Management." In ANIMAL AGRICULTURE, edited by H.H. Cole and Magnar Ronning, pp. 579-92. San Francisco: W.H. Freeman & Co., 1974.

Johnson, Geoffrey. PROFITABLE PIG FARMING. 4th ed. Ipswich, England: Farming Press (Books), 1973. 207 p.

Written for the young pig farmer "open to influence," this book sets high standards of production practice. Includes section on pig farming as a career, and future programs and politics.

Chapter 3: "Buildings and Equipment," pp. 35-62, illustrated with drawings of different size units.

Chapter 4, pp. 63-70, compares indoor and outdoor systems.

Chapter 8: "Producing Food Rations and Methods of Use," pp. 104-37, favors home-produced feeds. Includes information on vegetable and animal protein supplements.

Chapter 11: "Enzootic Pneumonia and Its Eradication," pp. 161-76, gives health maintenance and disease prevention hints and tips.

Johnson, Joe B., and Morris, F. Ray. "Raising Feeder Pigs." Publication EM-3771. Pullman: Washington State University Cooperative Extension Service, 1973. 14 p. Illus. Mimeographed.

This extension bulletin suggests that an average- to small-size farm with minimum grain production, but with available legume and legume grass pasture can do a good volume of business on feeder pigs.

Outlines a feeder pig program ranging from selection of breeder stock to either marketing feeder pigs or feeder pig production on contract with a marketing agency.

Luce, William G. MANAGING THE SOW AND THE LITTER. OSU Facts Sheet no. 3650. Stillman: Oklahoma State University Cooperative Extension Service, 1974. 3 p. Illus.

Not available for examination.

Luscombe, John. PIG HUSBANDRY. 4th ed. Ipswich, [England]: Farming Press (Books), 1972. 192 p. Illus.

Written to draw attention of pig breeders to the points of management that are most directly related to profitability.

Chapter 3: "Factors Influencing Profitability," pp. 34-59, is packed with information on both feed and inherited capacity for feed conversion; cost of housing; capital needed; records of breeding and feeding; cost of keeping a boar. Also see chapter 5, pp. 87-113, on housing.

Pond, W.G., and Maner, J.H. SWINE PRODUCTION IN TEMPERATE AND TROPICAL ENVIRONMENTS. San Francisco: W.H. Freeman & Co., [1974]. viii, 646 p. Illus., glossary.

Gives a technical basis on which to plan a successful pork operation in either temperate or tropical zones.

Chapter 18: "Swine Management and Marketing," pp. 494-543, discusses purebred and commercial swine enterprises and their differences. Recommends keeping good records.

Appendix contains a directory of national swine industry associations and examples of swine records.

Price, W.T., ed. THE PIG, MODERN HUSBANDRY AND MARKETING. London: Geoffrey-Bles/Garstone Press, 1962. 299 p. Illus.

"Economics of Pig Husbandry," pp. 1-36, by G.B. Clark, discusses



in detail investment of capital; costs and returns; measurement of the industry; number of pigs to keep; reduction in food costs; slaughter weight and carcass quality to meet market requirements.

Rees, Stephen William. PIG FARMING FOR PROFIT. Wellington, New Zealand: A.H. and A.W. Reed Pty., [1967]. 286 p. Illus.

This practical book on pig farming brings out several aspects not treated elsewhere.

Chapter 9: "Management and Costing," pp. 186-97, stresses advantage of a good farm advisory man when considering acceleration or addition of a pig enterprise. Four costing methods are described that relate size of farm, labor force, and the enterprises in which the farmer already has invested. Advises on the economics of whey in pig feeding.

In chapter 10: "Miscellaneous Management Matters," pp. 198-206, the open-air system is discussed; also causes of savaging behavior in pigs.

Thornton, Keith. PRACTICAL PIG PRODUCTION. Ipswich, [England]: Farming Press (Books), [1973]. 190 p. Illus., tables.

This book concentrates on crossbreed pigs, with discussion of stock and farm staff management, including job descriptions.

Housing is thoroughly covered, with many drawings and plans. Chapter 5: "Basic Requirements," pp. 50-63.

Chapter 6: "Housing--Stock," pp. 64-98, details types and purposes of housing for sows (farrowing, suckling), gilts, boars.

Van Arsdall, Roy N.; Smith, Richard B.; and Stricker, Thomas A. III. ECONOMIC IMPACT OF CONTROLLING SURFACE WATER RUNOFF FROM POINT SOURCES IN U.S. HOG PRODUCTION. Agricultural Economic Report no. 263. Washington, D.C.: U.S. Department of Agriculture, Economic Research Service, 1974. 56 p. Illus., tables, chapter biblios.

This study was made before the Environmental Protection Agency guidelines were promulgated.

Reports on the cost of preventing surface water pollution from hog waste sources. Analysis is based on investigation of runoff conditions in fifteen major hog-producing states.

Control and elimination of runoff is described in terms of cost to farmer, cost to government, and cost to consumer (increased prices).

## SWINE NUTRITION AND FEEDING

National Research Council. Committee on Nutrition of Domestic Animals. NUTRIENT REQUIREMENTS OF SWINE. 7th ed., rev. Washington, D.C.:



National Academy of Sciences, 1973. vi, 56 p. Illus., tables.

This report includes tables showing nutrient requirements and symptoms of deficiency in swine.

Tables 1-5 cover "Evaluating Performance of Market Pigs."  
Diet formulation is charted along with composition of feeds.

NUTRITION OF PIGS AND POULTRY: PROCEEDINGS OF THE EIGHTH EASTER SCHOOL IN AGRICULTURAL SCIENCE, 1961, UNIVERSITY OF NOTTINGHAM, [England]. Edited by J.T. Morgan and D. Lewis. London: Butterworth & Co., 1962. ix, 366 p. Illus., tables, author, subject indexes.

Part 4: "Nutrition of Pigs," pp. 189-340, has eight papers covering fetal nutrition, as well as technical and economic considerations in ration formulations.

List of members.

### SWINE DISEASES

Anthony, David John, and Lewis, E. Fordham. DISEASES OF THE PIG: A HANDBOOK OF DISEASES OF THE PIG, WITH AN INTRODUCTION TO ITS HUSBANDRY. 5th ed. Baltimore: Williams & Wilkins Co., 1961. xi, 407 p. Illus.

A book for the small pig farmer as well as for the veterinarian. Discusses various breeds, requirements for breeding, health of pigs, dentition, restraint.

Describes diseases caused by nutritional deficiency, parasites, local infections. Includes also effects of poisons and poisonous plants.

Barron, Norman. THE PIG FARMER'S VETERINARIAN BOOK. 8th ed. Ipswich, [England]: Farming Press (Books), [1974]. 182 p. Illus. (2 foldouts), pls. (1 color).

Guide for practical pig keepers. Stresses prevention of diseases through health maintenance management. Points out need of pigs for comfort in pens, buildings, and so forth. Includes poisoning from plants in discussion of skin affections, disorders, parasites.

Two foldout charts: "Disease Diagnosis Chart," and "Anatomy of the Pig."

Dunne, Howard E., ed. DISEASES OF SWINE. 3d ed. Ames: Iowa State University Press, 1970. 1,157 p. Illus. (part color), tables.

Sixty-four specialists contribute to this one-volume encyclopedia of information on swine disease. Useful to hog farmers, researchers, and animal scientists.

Beginning with a section on the anatomy and physiology of swine, the book covers bacterial and mycolic infections, parasitic infections, toxemias, poisoning, and so forth. There is coverage of surgery, nutrition, and feeds.

SYMPOSIUM ON FACTORS PRODUCING EMBRYONIC AND FETAL ABNORMALITIES, DEATH, AND ABORTION IN SWINE. CHICAGO, 1967: PROCEEDINGS. Agricultural Research Publication 91-73. Washington, D.C.: U.S. Department of Agriculture, 1969. iv, 164 p.

Papers by noted authorities and scientists reporting their research findings on the intrauterine environment in swine.

### SWINE HOUSING

Sainsbury, David. PIG HOUSING. 3d ed. Ipswich, [England]: Farming Press (Books), 1972. 212 p. Illus.

Richard Verdin's foreword says that this is the most comprehensive treatment ever written on housing of pigs and systems of management. Covers principles and practices in England and abroad. Considers in depth the pig's environmental needs--effect of heat, lighting, stocking densities, ventilation, sanitation.

Chapter 3: "Piggery Construction," pp. 44-56, assesses values of materials, insulation, and so forth. Illustrated with photographs. Chapter 12, pages 176-78, considers adaptations and improvement of an existing building.

Chapter 14: "Future Trends in Pig Housing," pp. 190-200.

Appendixes, pages 201-8, include summaries of environmental requirements, measurements, costs, and a code of recommendations for the welfare of pigs.

Muehling, Arthur J. SWINE HOUSING AND WASTE MANAGEMENT. Urbana: University of Illinois, College of Agriculture, Department of Agricultural Engineering, [1969]. 91 p. Illus., chapter bibliis.

Reviews research studies on space requirements for confinement in pig pens. Includes recommendations for future swine housing research.

Legal implications of waste handling, pages 79-80; recommendations for future hog waste management, pages 81-84.

### SWINE SHOWS

Nordby, Julius E., and Lattig, Herbert E. SELECTING, FITTING, AND SHOWING SWINE. 6th ed. Danville, Ill.: Interstate Printers & Publishers, [1961]. 95 p. Illus.

Prepared for those who are inexperienced in the art of showing swine at agricultural shows and fairs.

"Useful Terms in Describing Swine," pp. 1-4.

"Selecting Swine," pp. 5-43, emphasizes selection of meat-type barrows to meet buyer demand for lean pork.

Once a pig is selected, "Fitting Swine"--feeding and management for showing, follows. There is a section on training the pig for show; applying for show entry, pen space, health certificate; grooming and handling swine in the show judging ring.



## Chapter 5

### SHEEP MANAGEMENT

#### PROFITABLE SHEEP FARMING

Cooper, M. McG., and Thomas, R.J. PROFITABLE SHEEP FARMING. Ipswich, [England]: Farming Press (Books), [1971]. 160 p. Illus.

This book is written for flockmasters and shepherds, with varying degrees of experience. Discusses the economic pressures related to the "fat lamb production" intensive program; reviews practice of fattening sheep and cattle together; portrays the future of up-land sheep farming and the financial returns from hill farming.

Sheep breeds and their functions, flock maintenance, choice of breeds and crosses, age at purchase and replacement, management from lambing to weaning are topics covered.

Sections on hygiene, control of diseases (both parasitic and infectious), and mineral-metabolic disorders were written by R.J. Thomas.

DuFaur, Ralph. SHEEP FARMING FOR PROFIT. Wellington, New Zealand: A.H. and A.W. Reed Pty., [1966]. 272 p. Illus., charts.

This book has high reference value because it treats the topics of greatest concern to sheep farmers.

Chapter 8: "Hogget Rearing," pp. 123-36, advises on care of lambs following weaning.

Chapter 13: "Fencing, Types and Costs," pp. 190-200, advises on layout of the sheep farm.

Chapter 14: "Pasture Management," pp. 201-15, is on feed value, rate of growth, and botanical composition of forage; grazing methods; stocking rate; and autumn management.

Ensminger, M. Eugene. SHEEP AND WOOL SCIENCE. 4th ed. Danville, Ill.: Interstate Printers & Publishers, [1970]. 948 p. Illus.

Review in preface on changes in sheep business, specialization, and emphasis on market lamb production. Chapters cover all phases of sheep farming.

Chapter 18: "Business Aspects of Sheep Production," pp. 753-810, counsels the sheep manager on capital, credit, budgets, cooperative feed-lot contracts.

Appendixes include gestation table and all-time top sales for lamb. Lists breed registry associations, breed magazines, and state colleges of agriculture.

Fraser, Allan. SHEEP FARMING. 7th ed. London: Crosby Lockwood Staples, [1965]. 154 p.

Written by a sheep manager for sheepmen, about the industry and market demand for lamb as meat.

Chapter 2: "Sheep Breeds," pp. 21-29, has comprehensive details on every aspect of sheep breeding, and the management of sheep and lambs.

Chapter 10: "Sheep Feeding," pp. 76-83, deals with hill grazing, silage, hay, ewe's milk, nutritional needs of sheep.

Chapters 11-18 describe insect and pest control, as well as sheep diseases and their treatment.

Harris, Lorin E. "Management of Sheep and Other Fiber-Producing Animals." In ANIMAL AGRICULTURE, edited by H.H. Cole and Magnar Ronning, pp. 593-610. San Francisco: W.H. Freeman & Co., 1974.

Jordan, R.M.; Hanke, H.E.; Crown, H.G.; and Windels, Harvey. THREE DECADES OF MINNESOTA LAMB FEEDING RESEARCH. Station Bulletin no. 504. Minneapolis: University of Minnesota Agricultural Experiment Station, 1971. 33 p. Illus.

Study consolidates prices, margins, profits, and losses in lamb feeding from 1940-70.

Findings are equally useful to the farm flock owner and to the large commercial lamb feeder.

Jordan, R.M.; Hanke, H.E.; Martin, G.C.; and Rust, J.M. YEAR-ROUND SHEEP NUTRITION AND FEEDING PROGRAMS. Minneapolis: University of Minnesota Agricultural Experiment Station, 1973. 16 p. Illus., tables, charts.

Reports series of experiments in nutrition and management of ewes at various stages of production. Results and conclusions are given for each period. Summary on back cover.

Juergenson, Elwood M. APPROVED PRACTICES IN SHEEP PRODUCTION. 3d ed. Danville, Ill.: Interstate Printers & Publishers, [1973]. 406 p. Illus.

Furnishes comprehensive list of approved practices and their application in the sheep enterprise. Chapter outlines are summarized in appendix C.

Chapter 7: "Shelter and Equipment for Sheep," pp. 207-43, includes protection for small farm flocks and for range sheep. Drawings illustrate proper arrangement for feed space requirements.

Appendix A covers sheep breeders associations; organizations allied with livestock production; and sheep publications.

Leigh, J.H., and Noble, J.C., eds. PLANTS FOR SHEEP IN AUSTRALIA: A REVIEW OF PASTURE AND FODDER CROP RESEARCH, 1948-70. Sydney: Angus & Robertson, [1972]. 423 p. Illus., maps, reading list.

Based on interdisciplinary papers, condensed and edited for 1968 Australian Sheep and Wool Conference at Leura, New South Wales; reviewed for update by Leigh and Noble. Notes on contributors.

Papers cover native pasture areas; trees and shrubs for sheep; pasture establishment; irrigated pastures; fodder crops; effects of grazing; performance of sheep grazing in different pastures; pasture weeds.

Marsh, Hadleigh. NEWSOM'S SHEEP DISEASES. 3d ed. Baltimore: Williams & Wilkins Co., 1965. 470 p. Illus.

Reference value for sheep producers as well as veterinarians. Describes sheep diseases occurring in the United States. No attempt is made to give methods of diagnosis and treatment.

National Research Council. Committee on Animal Nutrition. NUTRIENT REQUIREMENTS OF SHEEP. 4th ed., rev. Washington, D.C.: National Academy of Sciences, 1968. 64 p. Illus., tables.

Tables carry information on new nomenclature; determination of nutrient requirements of sheep--energy, protein, water, minerals, vitamins. Separate table has requirements for range sheep. Other tables cover feeding value of roughages, pelleted feeds, and antibiotics; milk-fed lamb production (creep needs); composition of feeds.

Scott, George E., ed. THE SHEEPMAN'S PRODUCTION HANDBOOK. Denver, Colo.: American Sheep Producer's Council, 1970. 226 p. Loose-leaf.

A handbook for sheepmen of North America, intended for use as a guide to best methods of raising sheep, but not the only method. The book emphasizes that climate, topography, and marketing may indicate other methods.

## Sheep Management

---

Text indicates the enterprise is most profitable when sheep production is the major source of income. A commercial flock size is from 1,000 to 2,000 ewes.

Spedding, Colin Raymond William. SHEEP PRODUCTION AND GRAZING MANAGEMENT. Baltimore: Williams & Wilkins Co., 1965. xii, 380 p. Illus.

The second edition, 1970, was not available for examination.

The author writes about the agricultural ecology of grazing sheep. Places pasture and sheep in the biological process affecting the health of the plants and the animals.



## Chapter 6

### THE DAIRY GOAT

Klingbeil, A.L. BARNs, BUILDINGS AND CONSTRUCTION DETAILS FOR DAIRY GOATS. Columbia, Mo.: American Supply House, n.d. 47 p. Illus.

Mackenzie, David. GOAT HUSBANDRY. 3d ed. London: Faber and Faber, [1970]. 368 p. Illus., reading list.

While oriented to farming in Great Britain, this comprehensive study of the milk goat in different farming systems has reference value for other areas. Includes hill, woodland, general, and market garden farms as locations for the goat enterprise.

Management of the herd: control, housing, selection of stock; cropping for goats; feed, including industrial waste. The nutritive and curative value of goat's milk is discussed on pages 56-87; its role in dairy produce, pages 268-92.

Appendix 1: "Organization of Goat Keeping," pp. 349-53.

Owen, Nancy Lee. "The Illustrated Standard of the Dairy Goat." Rev. ed. [Scottsdale], Ariz.: THE DAIRY GOAT JOURNAL, [1973]. vii, 69 p. Illus. Mimeographed.

A guide for the progressive herdsman or for the novice to use in observing and judging merits or imperfections in his herd. Points to anatomical details by illustration and caption. Includes suggested pattern for judging, with a scoring system.

Shields, Joan. THE MODERN DAIRY GOAT. London: C. Arthur Pearson, [1972]. 172 p. Illus., tables.

A manual for goat breeders and goat farmers. Covers advantages of goat keeping, the breeds, buying a goat, housing, feeding, cropping for feed. Management of the goat dairy, routine milking, and milk records are discussed. Includes chapters on the male goat, breeding, kidding, kid rearing.



## Chapter 7

### POULTRY AND EGG PRODUCTION MANAGEMENT

#### POULTRY AND EGG PRODUCTION

Baker, Ralph. INTEGRATING EGG PRODUCTION AND MARKETING. Marketing Research Report no. 332. Washington, D.C.: U.S. Department of Agriculture, Agricultural Marketing Service, 1959. 46 p. Illus.

Report of a pilot study undertaken to obtain information on new methods of handling eggs in which production and marketing are coordinated under a single management. The data are based on interviews in 1958 with twenty-nine operators of three types of coordinated programs in most of the important egg-producing sections of the country.

Benson, V.W., et al. INTERREGIONAL COMPETITION IN THE BROILER INDUSTRY: A COMPUTER SIMULATED MODEL. Miscellaneous Publication 792. College Park, Md.: University of Maryland Agricultural Experiment Station, 1972. 81 p. Reading list.

Introduction sketches growth of broiler industry from 1934 to present, shifting in structure during that period from an industry of specialized functions to a vertically-integrated industry. The industry has lowered the feed-to-meat ratio.

A model design is described in relation to seven economic shocks which the industry could face.

Biddle, George H., and Juergenson, Elwood M. APPROVED PRACTICES IN POULTRY PRODUCTION. 3d ed. Danville, Ill.: Interstate Printers & Publishers, [1963]. 332 p. Illus.

A book for poultrymen and farmers--full- or part-time. Covers opportunities in the poultry business; selection, feeding, housing and equipment; control of parasites and diseases; and other management problems.

Appendixes include common poultry terms, list of poultry publications, names and addresses of national poultry associations and allied industries.

British Oil & Cake Mills. HEN BATTERY MANAGEMENT. London: Unilever House, n.d. 22 p. Illus.

A practical manual about the management of the laying flock, with references to labor involved.

Advises on selection of breeds and stock replacements; management of vice problems such as egg eating, water flicking, pellet-breaking, broodiness. Egg size, egg production records, feeds and feeding, body weight, as well as poor egg production are discussed.

The health of the birds is stressed, in terms of external parasites and discomforts such as iritis, bumblefoot.

British Oil & Cake Mills. Poultry Advisory Board. INSULATING POULTRY BUILDINGS. London: Unilever House, n.d. 28 p. Illus., tables.

Presents examples of insulating materials for roof and walls. "Family Tree of Insulation," p. 23.

Gives estimates of the heat and water output of chickens.

\_\_\_\_\_. POULTRY MANURE AND ITS DISPOSAL. 2d ed. [London: Unilever House, 1965.] 36 p. Illus.

Manual for the manager of a poultry farm. A practical, data-packed work with guidance in determining the size of disposal tank required for size of flock; construction of the manure pit, irrigation, and manure spreading.

Poultry lagoons--both outdoor and indoor types--are covered. Discusses such problems as: odor, decomposition speedup, use of septic tanks, and cleaning costs.

The uses suggested for poultry manure include fertilization of grasslands and sale of manure, with haulage costs estimated.

\_\_\_\_\_. THE VENTILATION OF POULTRY HOUSES. London: Unilever House, [1965]. 33 p. Illus., charts, reading list.

A practical guide for the poultryman. The environmental and physiological requirements of poultry introduce the detailed data on ventilation standards, methods of ventilating, selection and installation of a ventilating system, determination of ventilation faults. A list of equipment manufacturers is included.

Bundy, Clarence E., and Diggins, Ronald V. POULTRY PRODUCTION. Englewood Cliffs, N.J.: Prentice-Hall, 1960. 383 p. Illus., tables, maps.

An aid to present or future poultry producers. Outlines basic principles and discusses developments in producing and marketing poultry. Includes turkeys, ducks, and geese.

Card, Leslie E., and Nesheim, Malden C. POULTRY PRODUCTION. 11th ed. Philadelphia: Lea & Febiger, 1972. vii, 392 p. Illus., tables.

Emphasis is on management and need to program for breeding, provide housing and equipment for incubators; proper nutrition; disease and parasite control; marketing eggs and poultry.

Chapter 13: "The Business of Poultry Keeping," pp. 338-80.

[DeSaulles, Deays]. PICTORIAL POULTRY-KEEPING. [2d ed.] London: C. Arthur Pearson, [1962]. 208 p. Illus.

A book for the small-scale poultry manager. Photographs and explanatory text cover systems of poultry keeping, houses and appliances, many to be made by the poultry keeper.

Chickens, ducks, geese, turkeys, guinea fowl, and bantams are pictured with discussion of their special needs for housing and nutrition.

"Egg Factories," pp. 86-89.

EGG GRADING MANUAL. Agricultural Handbook no. 75. Washington, D.C.: U.S. Department of Agriculture, 1975. 55 p. Illus.

Useful information for the egg producer, although aimed at the egg grader. Forms included for keeping egg production and grade records on the farm.

Ensminger, M. Eugene. POULTRY SCIENCE. Danville, Ill.: Interstate Printers & Publishers, [1971]. 276 p. Illus.

Stresses importance of business methods in conducting the large poultry enterprise.

Chapter 7: "The Egg," pp. 229-40, and chapter 10: "Marketing Eggs and Poultry," pp. 241-55, present consumption statistics, trends, market channels, and foreign trade in poultry products.

Chapter 8: "Business Aspects of Poultry Production," pp. 193-277, deals with capital, credit, management, records and accounts, budgeting.

Appendix includes a unit: "How to Make Whitewash," plus a list of poultry breeders and poultry magazines.

Faber, Frederic Lewis, and Irvin, Ruth J. THE CHICKEN-BROILER INDUSTRY: STRUCTURE, PRACTICES, AND COSTS. Marketing Research Report no. 930. Washington, D.C.: U.S. Department of Agriculture, Economic Research Service, 1971. iii, 56 p. Reading list.

This study covers data from 1930-69 on production--output costs, percent of cost, value of inputs; processing--irradiation preservation; marketing--seasonality, channels, shelflife, storage-loss.

Figure 2: "Functions of a Typical Integrated Broiler Farm," p. 4.

Figure 4: "Major Marketing Channels for Ready-to-Cook Broilers, 1969," p. 30.

"Consumption and Demand Projections, 1975-1985," p. 45.

Gallimore, William W., and Irvin, Ruth J. THE TURKEY INDUSTRY: STRUCTURES, PRACTICES, AND COSTS. Washington, D.C.: U.S. Department of Agriculture, Economic Research Service, 1973. vi, 47 p. Illus., charts, maps, chapter biblios., reading list.

Reports changes in turkey industry since the 1950s as regional shifts concentrate production and marketing. Trends are toward a more coordinated industry through contract and other arrangements for further processing of poultry products.

Coordination in the turkey developed differently from chicken-broiler production. Processors have been the main coordinators in turkey production and marketing, whereas feed firms were the chief coordinators in chicken-broiler industry.

Prevalent forms of coordination are turkey production on processor and/or feed firm company-owned and leased farms; marketing agreements between producer cooperatives and processors; feed firm agreements with processors.

The impact of turkey processing wastes on water pollution was included in this survey. It was found that thirty-two plants interviewed had private water treatment plants. Costs of water treatment are shown in relation to other production costs. Figure 5: "Marketing Channels for Turkeys, 1969," p. 32.

Landauer, Walter. THE HATCHABILITY OF CHICKEN EGGS AS INFLUENCED BY ENVIRONMENT AND HEREDITY. Storrs: University of Connecticut Agricultural Experiment Station, [1961]. 278 p. Illus., tables, diags., reading list.

Influences on egg hatchability are characterized in genetic factors, age and activity of parent stock, metabolism of the laying hen, infectious disease.

The revised edition, August 1967, was not available for examination.

Lorenz, F.W. "Reproduction in Domestic Fowl." In REPRODUCTION IN DOMESTIC ANIMALS, edited by H.H. Cole and P.T. Cupps, pp. 569-608. New York: Academic Press, 1969.

Mann, George Ernest. POULTRY BREEDING: GENETICS AND SYSTEMS OF BREEDING. [3d ed.] London: H.M. Stationery Office, 1960. vi, 146 p. Illus., glossary.

For the independent breeder. Gives essential basic information in

order to compete with large commercial breeders.

Nalbandov, A.V. "Egg Laying." In *ANIMAL AGRICULTURE*, edited by H.H. Cole and Magnar Ronning, pp. 394-408. San Francisco: W.H. Freeman & Co., 1974.

North, Mack O. *COMMERCIAL CHICKEN PRODUCTION MANUAL*. Westport, Conn.: AVI Publishing Co., 1972. viii, 645 p. Illus., reading list.

This manual on all phases of chicken production is for the poultry manager.

Chapter 44, pages 619-23, is a service manual on waste management.

Chapter 45, pages 624-27, includes lists of books, scientific and trade journals useful to the poultry manager.

ORGANIZATION AND COMPETITION IN THE POULTRY AND EGG INDUSTRIES. Washington, D.C.: National Commission on Food Marketing, 1966. v, 118 p. Illus., tables.

General characteristics of poultry and egg industries reflect changes in technology, organization, and location of these industries since 1946. Vertical integration, concentration in the industry, ownership changes, product development and differentiation, marketing margins, and foreign trade in poultry and eggs are among the topics covered by chapters. Enriched text with tables of statistical data. Footnotes cite in-depth studies and surveys, other sources of data.

PARTICIPANTS IN THE NATIONAL POULTRY IMPROVEMENT PLAN. Agricultural Research Service Publication NE-9-2. Washington, D.C.: U.S. Department of Agriculture, Agricultural Research Service, 1975. 88 p.

Information by states on national plan hatcheries, dealers, independent flocks, egg-type and meat-type chickens, waterfowl, game-birds.

POULTRY HOUSING ENVIRONMENTAL SEMINAR: PROCEEDINGS. Raleigh: North Carolina State University, Agricultural Experiment Station, 1974.

Not available for examination.

Roy, Ewell P. "The Broiler Chicken Industry." In *MARKET STRUCTURE OF THE AGRICULTURAL INDUSTRIES*, edited by John R. Moore and Richard G. Walsh, pp. 68-100. Ames: Iowa State University Press, 1966.

Roy, Sujet Kumar, and Johnson, Phillip N. ECONOMETRIC MODELS OF COST AND FUTURES PRICES OF SHELL EGGS. Technical Bulletin no. 1502. Washington, D.C.: U.S. Department of Agriculture, [Commodity Exchange Authority], [1974]. 32 p. Illus., reading list.

This study was conducted during 1970-72 at Texas Technical University, College of Agricultural Science under a research grant from the Commodity Exchange Authority, Department of Agriculture.

Purpose of the research project was to develop econometric models to predict or estimate shell egg prices. The multiequation models, based on the supply-demand price data for 1961-69, were designed to help the Commodity Exchange Authority in regulating the sale of shell egg futures. The findings may be useful to egg producers in studying price trends.

Sykes, Geoffrey. POULTRY; A MODERN AGRIBUSINESS. Two chapters on housing by Gerald Ffiske. Index by Muriel Lock. London: Crosby Lockwood Staples, [1965]. 265 p. Illus., tables, diags.

The author, a poultry breeder and businessman, who has studied the industry in the United States, looks at the British poultry business, assesses it in relation to what he has seen in America. He emphasizes the importance of genetics to improve production in Britain. He discusses the relationship of better product to the demands of the retail trade and the consumer.

Gerald Ffiske, an animal engineer, in chapter 9: "Engineering Behind Modern Poultry Husbandry," pp. 109-21, gives information on the environment for economic performance of the stock. Diagrams, page 119, illustrate methods for ventilating poultry houses.

In chapter 10: "Poultry Housing and Equipment," pp. 123-33, Ffiske builds a cost-performance relationship example for a building housing 5,000 laying hens.

SYMPOSIUM ON PHYSIOLOGY OF THE DOMESTIC FOWL, HELD AT UNIVERSITY OF NOTTINGHAM [ENGLAND] SCHOOL OF AGRICULTURE, SUTTON BONINGTON, 16-18 DECEMBER 1964: PROCEEDINGS. Edited by C. Horton-Smith and E.C. Amoroso. Indexes by Elizabeth M. Leonard. Edinburgh: Oliver & Boyd, 1966. vi, 329 p. Illus., name, subject indexes.

Symposium was organized by the Scientific Advisory Committee of the British Egg Marketing Board.

Lists participants, with authors of papers keyed.

Thomann, Werner. POULTRY KEEPING IN TROPICAL AREAS. Rome: Food and Agriculture Organization of the United Nations, 1968. 58 p. Illus., tables.



This manual is directed to agricultural leaders in applied nutrition projects and to the small poultry producer.

Recommends techniques of managing a flock in the tropics, including record keeping. Appendixes give examples of rations and nutrient requirements of poultry; plans for poultry houses and equipment.

Tobin, Bernard F., and Arthur, Henry B. DYNAMICS OF ADJUSTMENT IN THE BROILER INDUSTRY. Boston: Harvard University, School of Business Administration, Division of Research, 1964. 176 p. Illus., charts (1 foldout), chapter bibliis.

This study was the first in the commodity studies published after A CONCEPT OF AGRIBUSINESS by John H. Davis and Ray A. Goldberg.

Tobin and Arthur look at management problems during the post-World War II period when the industry was adopting new technology, changes in form or organization, and different markets.

Chapter II: "Management and Effective Integration," pp. 129-34, has concluding remarks in summarizing chapters on production cycles and planning geared to supplying the market.

Appendix, pp. 135-64, reprints the National Library of Agriculture, Library List no. 64, "Bibliography on Broiler Industry 1953-1962."

Fold-out Exhibit 8: "Functional Steps in the Commercial Broiler Industry," between pp. 36-37.

Wilson, W.O., and Vohra, Pran. "Poultry Management." In ANIMAL AGRICULTURE, edited by H.H. Cole and Magnar Ronning, pp. 622-36. San Francisco: W.H. Freeman & Co., 1974.

### POULTRY NUTRITION AND FEEDING

British Oil & Cake Mills. Poultry Advisory Board. POULTRY FEEDS. London: Unilever House, 1964. 21 p.

Describes balanced rations for poultry--pellets, crumbs, or mash. Discusses feeding from baby chicks to moulting or broody hens; restricted program for growing pullets; use of grit and antibiotics for poultry.

General notes give information on equipment in terms of number of birds being cared for, by age.

National Research Council. Committee on Animal Nutrition. NUTRIENT REQUIREMENTS OF POULTRY. Rev. ed. Washington, D.C.: National Academy of Sciences, 1971. v, 54 p.

Not available for examination.

Schaible, Philip J. POULTRY FEEDS AND NUTRITION. Westport, Conn.: AVI Publishing Co., 1970. 648 p. Illus., glossary, reading list.

For the feeder and general poultry man as well as the veterinarian.

Information on feeding systems; feed formulation; ration compilation by computer; pelleting, storage; economics of farm mixing; feed laws and controls.

Chapters on management of poultry operations, including turkeys, ducks, and geese; importance of sanitation.

Appendix, part 7: "Egg Strain Breeders and Meat Strain Breeders," p. 636.

SYMPOSIUM (SECOND) ON PROTEIN UTILIZATION BY POULTRY, HELD AT UNIVERSITY OF NOTTINGHAM [ENGLAND]. SCHOOL OF AGRICULTURE, SUTTON BONINGTON, 22 AND 23 SEPTEMBER 1965: PROCEEDINGS. Edited by R.A. Morton and E.C. Amoroso. Edinburgh: Oliver & Boyd, 1967. 227 p.

Symposium was organized by the Scientific Advisory Committee of British Egg Marketing Board.

Dietary protein was viewed in the poultry life cycle, and methods for assuring appropriate intake of amino acids were studied.

Titus, Harry W., and Fritz, James C. THE SCIENTIFIC FEEDING OF CHICKENS. 4th ed. Danville, Ill.: Interstate Printers & Publishers, [1961]. 297 p. Illus., reading list.

Thorough coverage of nutrient requirements and allowances; nutritional deficiency diseases and vices in chickens caused by improper rations.

Feed sources of nutrients--cereals, fats and oils, animal and vegetable protein, vitamin and mineral supplements--are examined.

Chapter 11: "Management and Feeding," pp. 219-24, includes housing arrangements and methods of feeding.

### POULTRY DISEASES

Bailey, J.W. POULTRYMAN'S MANUAL; FLOCK MANAGEMENT AND CHICKEN DISEASES. New York: Springer Publishing Co., [1957]. 296 p. Illus., tables.

A reference manual for flock owners and agricultural students.

Covers diseases in detail, but cautions that this is no substitute for professional veterinary services. Readers are counseled that the flock owner must decide whether professional help is needed.

Table: "The Common Chicken Diseases," p. 286.

Hofstad, M.S., and Calnel, B.W. DISEASES OF POULTRY. 5th ed. Ames: Iowa State University Press, 1972. 1,181 p. Illus.

This edition is under the editorial board of American Association of Avian Pathologists. Formerly the work of H.E. Biester and L.H. Schwarte.

Encyclopedic coverage of poultry diseases, useful to the poultryman. Chapters on anatomy, nutrition, genetics, and hematology are eliminated because these subjects are covered well in other publications. This edition has a new chapter on neoplastic diseases and consolidates information on tumors in poultry. Information on diseases of turkeys is incorporated into pertinent chapters rather than in a separate chapter, as in former editions.

Merck and Company. THE MERCK POULTRY SERVICEMAN'S MANUAL. 2d ed. Rahway, N.J.: Merck Chemical Division, 1967. 238 p. Illus., tables.

Useful to the poultry farmer. Enables him to consult the veterinarian more intelligently. The manual does not replace professional services of either the veterinarian or the laboratory.

Main symptoms and lesions are described. Instructions are given for careful postmortem examination to provide the laboratory with the required information and samples.



## Chapter 8

### ANIMAL WASTE MANAGEMENT

Ashraf, Muhammad; Christensen, Robert L.; and Frick, George E. THE IMPACT ON DAIRY FARM ORGANIZATION OF ALTERNATIVE MANURE DISPOSAL SYSTEMS; A METHOD OF ASSESSING THE COST OF ENVIRONMENTAL REGULATION. Research Bulletin no. 608. Amherst: University of Massachusetts Agricultural Experiment Station, 1974. v, 40 p. Illus., tables, chapter bibliis.

In this study, size of manure hauling mechanism, employment of seasonal labor, and farm lands are analyzed in order to identify factors that would minimize unfavorable impact on environment quality. Alternate disposal systems for manure are considered for effect on the dairy farm organization.

Bruns, E.G., and Crowley, J.W. SOLID MANURE HANDLING FOR LIVE-STOCK HOUSING, FEEDING, AND YARD FACILITIES IN WISCONSIN. Station Bulletin A2418. Madison: Wisconsin University Agricultural Experiment Station, [1972]. 81 p. Illus.

The guidelines presented in this bulletin were developed from discussion in the Wisconsin Dairy Cattle Housing Committee. The first pages of the text summarize suggestions and requirements. Management and follow-through in operating the system is stressed.

There are working drawing plans for four actual farm installations for solid manure.

NATIONAL SYMPOSIUM ON ANIMAL WASTE MANAGEMENT. Washington, D.C.: Council of State Governments, [1972?]. 205 p.

Proceedings of the symposium on animal waste management held 28-30 September 1971, Airlie House, Warrenton, Virginia. The meeting was cosponsored by Department of Agriculture, Environmental Protection Agency, Council of State Governments, and the National Association of Land-Grant Colleges. The papers presented reported on activities of the states in animal waste management.

Young, R.J. "Animal Waste Management in Modern Poultry Production Systems." In PROCEEDINGS OF A CONFERENCE ON AGRICULTURAL AND PROCESSING WASTES IN THE EASTERN REGION. Agricultural Research Service no. 73-70. pp. 53-60. Washington, D.C.: U.S. Department of Agriculture, Agricultural Research Service, 1971. Reading list.

Presents systems which have been studied at Cornell University--incineration; dehydration with heated air; drying with unheated air. Refers to the Rutgers University injection technique.

## Chapter 9

### REFERENCE MATERIALS RELATED TO PART 4

#### ABSTRACT JOURNALS

ANIMAL BREEDING ABSTRACTS. Farnham Royal, England: Commonwealth Agricultural Bureaux, Commonwealth Bureau of Animal Breeding and Genetics, 1931-- . Monthly. Author index.

Covers world literature on general and scientific aspects of genetics and reproduction of farm animals and related species, including poultry.

DAIRY SCIENCE ABSTRACTS. Farnham Royal, England: Commonwealth Agricultural Bureaux, Commonwealth Bureau of Dairy Science and Technology, 1939/40-- . Monthly.

Abstract of the world's literature on the science and technology of dairying on both sides of the farm gate--the production of milk and the processing of milk and milk products.

NUTRITION ABSTRACTS AND REVIEWS. Farnham Royal, England: Commonwealth Agricultural Bureaux, Medical Research Council, 1931/32-- . Monthly.

Current literature on foods and feedingstuffs and the nutrition of humans, as well as both wild and domesticated animals.

#### BIBLIOGRAPHIES

Cresswell, Eric, comp. "Sheep Husbandry and Research: A Bibliography." Radlett, [England]: National Sheep Breeders Association, [1963]. Unpagged. Mimeographed.

Based on references to sheep husbandry and research papers published in Great Britain 1939-61, inclusive. Compiled at Rowett Research Institute, Bucksburn, Aberdeen, Scotland.

Miner, J. Ronald; Bundy, Dwaine; and Christenburg, Gerald, comps. BIBLIOG-

## Reference Materials

---

RAPHY OF LIVESTOCK WASTE MANAGEMENT. EPA R2-72-101. Washington, D.C.: Environmental Protection Agency, 1972. 138 p.

Selections for this bibliography are works concerned with technology of animal wastes--from beef cattle, dairy cattle, swine, sheep, poultry, and other animals of economic importance, raised in roofed or unroofed systems.

The bibliography covers water pollution, odor, characteristics, storage, transport, treatment, utilization and disposal of animal manures.

The references are entered by title, author, key word, and source data from journal papers, conference proceedings, university and government publications, books or book chapters. Several unpublished papers, academic theses, and abstracts of current articles are included.

## REFERENCE BOOKS

Bailey, J.W. VETERINARY HANDBOOK FOR CATTLEMEN. 4th rev. ed. New York: Springer Publishing Co., [1972]. vii, 531 p. Illus.

This handbook is designed to help the cattleman to intelligently use the professional veterinarian's time. Suggests methods to follow for minor ailments and emergency measures that can be taken until the veterinarian arrives. Chapter on diseases describes all types--contagious, digestive, respiratory.

List for the home veterinary chest, pages 63-64.

A chapter on practical pointers for owners written from the veterinarian's viewpoint, lists eleven conditions when a veterinarian must be called.

Barron, Norman. THE DAIRY FARMER'S VETERINARY BOOK. 8th ed. Ipswich, England: Farming Press (Books), [1973]. 252 p. Illus.

Stresses importance of good management practices in maintaining a healthy herd. Recommends employing the veterinary surgeon as a consultant, as a member of the dairy farm staff.

Designates a vaccination policy, correct maintenance of breeding records, and proper design of dairy buildings, as precautions to avoid health problems.

Chapter 17: "First Aid on the Dairy Farm," pp. 232-45.

Appendix: "The Veterinary Cupboard," p. 250, "Farm Recipes (For Remedies)," p. 251.

BRITISH POULTRY STANDARDS; COMPLETE SPECIFICATIONS AND JUDGING POINTS OF ALL STANDARDIZED BREEDS AND VARIETIES OF POULTRY AS COMPILED BY THE SPECIALIST BREED SOCIETIES AND RECOGNIZED BY THE POULTRY CLUB OF GREAT BRITAIN. Edited by C.G. May. 3d ed. London: Iliff Books, [1971]. 372 p. Illus. (part color).



Forty-seven breeds of large fowl--chickens, turkeys, ducks, and geese--are pictured in color.

Leg, comb, tail, head, and breast faults are listed. These data are supplemented by egg standards and aspects of faulty eggs.

Primarily for the commercial poultryman, but also of use to the geneticist who is developing new breeds.

Casalis, Jacques; Mann, Ernest John; and Schulz, Max Erich, comps. DAIRY DICTIONARY. Nurnberg, Germany: Hans Carl, Verlag KG, [1963]. 639 p.

Compiled under the auspices of the International Dairy Federation. Published in English, French, and German.

Trilingual terminology of the dairy industry. Pages carry three lists of terms: English, French, German; then, French, German, English.

Useful reference for the pure breed dairyman.

Davis, J.G. THE SUPPLEMENT TO A DICTIONARY OF DAIRYING. London: Leonard Hill Books, 1965. xvii, pp. 1,133-791. (Continues the paging in first edition of 1950.)

An encyclopedia of dairy science and technology. Primarily for English-speaking countries. Journal references are those published in the United Kingdom.

Mason, I.L. A WORLD DICTIONARY OF LIVESTOCK TYPES AND VARIETIES. Technical Communication no. 8, rev. Farnham Royal, England: Commonwealth Agricultural Bureaux, 1969. 268 p.

Lists livestock names which appear in the literature. Indicates synonyms. Recommends one form for English usage. Also includes brief references to origin of breed, type, variety, or present distribution.

Somes, Ralph G. GALLUS DOMESTICUS REGISTRY OF GENETIC STOCKS IN NORTH AMERICA: A DIRECTORY OF SPECIALIZED LINES AND STRAINS, MUTATIONS: BREEDS AND VARIETIES OF CHICKENS, JAPANESE QUAIL AND TURKEYS. Bulletin 437. Storrs: University of Connecticut Agricultural Experiment Station, 1971. 46 p.

This edition covers the United States and Canada. Stocks listed are those submitted by breeders. Describes and locates for chickens, quail, and turkey: specialized lines and strains; inheritance, linkage, characteristics, literature references, and locations of mutant strains; breeds and varieties described and located; and other information of interest to poultry breeders. The registry is planned for update every three years.

### PERIODICALS

There are periodicals published for livestock men who manage almost every breed of livestock. These magazines are published in national, regional, and/or state editions in the United States. This is true of those published in Canada, Britain, Australia, and New Zealand. For this reason, titles here are only a sample of the monthly publications circulated nationally in the United States. The interested livestock farmer will, of course, consult his county agent or look over the magazines in the library of the agricultural college nearest him. The addresses of the periodicals are given in part 7: Appendixes.

BEEF. St. Paul, Minn.: Webb Publishing Co., 1964-- . Monthly.

BROILER INDUSTRY. Sea Isle City, N.J.: Garden State Publishing Co., 1937-- . Monthly.

DAIRY GOAT JOURNAL. Scottsdale, Ariz.: n.p., 1916-- . Monthly.

EGG INDUSTRY. Sea Isle City, N.J.: Garden State Publishing Co., 1918-- . Monthly.

FEEDLOT MANAGEMENT. Minneapolis, Minn.: Miller Publishing Co., 1959-- . Monthly.

FEED MANAGEMENT. Sea Isle City, N.J.: Garden State Publishing Co., 1951-- . Monthly.

HOARD'S DAIRYMAN. Fort Atkinson, Wis.: W.D. Hoard & Sons Co., 1935-- . Semimonthly.

HOG FARM MANAGEMENT. Minneapolis, Minn.: Miller Publishing Co., 1954-- . Monthly.

LIVESTOCK MARKET DIGEST. Kansas City, Mo.: Livestock Market Digest, 1962-- . Monthly.

POULTRY TRIBUNE. Mt. Morris, Ill.: Watt Publishing Co., 1895-- . Monthly.

RANCHMAN. Tulsa, Okla.: Henry L. King, 1941-- . Monthly.

SHEEP BREEDER AND SHEEPMAN. Columbia, Mo.: Livestock Services, 1880-- . Monthly.

SHEPHERD. Sheffield, Mass.: A.A. Lund Associates, 1956-- . Monthly.

## ORGANIZATIONS, ASSOCIATIONS, SOCIETIES, INSTITUTES

Like the periodicals, there is at least one organization for every livestock farmer, depending upon his interests. Associations provide research and educational programs; promote legislation; seek improvement of breeds; or serve as an agent for administering a marketing program. The associations listed here are a mere sample of those listed in the *ENCYCLOPEDIA OF ASSOCIATIONS*, 11th ed. Detroit: Gale Research Co., 1977. The addresses of the listed associations are given in part 7: Appendixes.

American Dairy Goat Association

American Egg Board

American National Cattlemen's Association

American Poultry Association

American Sheep Producers Council

Dairy Herd Improvement Association

Publishes DHIA SIRE SUMMARY LIST. 1935-75. Annual. 1975-- . 3/year; DHIA COW PERFORMANCE INDEX. 1968-75. Annual. 1975-- . 3/year.

Both publications are issued as computer printouts to state extension dairymen, breeders associations, and owners of the animals.

National Association of Animal Breeders

National Institute of Animal Agriculture

Promotes interest in animal agriculture

Poultry Breeders of America

## U.S. GOVERNMENT SERIAL PUBLICATIONS

These publications are listed here in order of the chapters in part 4.

### Livestock

CATTLE ON FEED. Washington, D.C.: U.S. Department of Agriculture, Crop Reporting Board, 1948-- . Monthly.

LIVESTOCK AND FEED RELATIONSHIPS: NATIONAL AND STATE. Statistical Bulletin no. 530. Washington, D.C.: U.S. Department of Agriculture, Economic Research Service, 1974. vi, 192 p.

Livestock-feed-balance interrelationship and livestock production-feed relationships reported. Uses 1969-71 base years for consuming animal unit count.

\_\_\_\_\_. Supplement to Statistical Bulletin 530, covering 1974. 1975. 101 p.  
Updates statistics contained in report issued 1974.

LIVESTOCK AND MEAT SITUATION. Washington, D.C.: U.S. Department of Agriculture, Economic Research Service, 1937-- . 6/year.

Includes summary of situation and outlook for livestock industry. Production and consumption statistics of cattle, hogs, sheep, and lambs.

LIVESTOCK AND MEAT STATISTICS. Statistical Bulletin no. 522. Washington, D.C.: U.S. Department of Agriculture, Statistical Reporting Service, July 1973. vi, 301 p.

Statistical Bulletin no. 522 contains long-term historical series, starting with 1950 and covering data through 1972. Covers statistics on livestock numbers and production on farms; cattle on feed; livestock movement (from public stockyards, stocker, and feeder) and slaughter; livestock and meat prices; meat trade, storage, and processing.

\_\_\_\_\_. Supplement for 1973. June 1974. vi, 151 p. Data for 1970-73.

This is the third base bulletin on LIVESTOCK AND MEAT STATISTICS. Statistical Bulletin no. 230 published in 1958 and no. 333 published in 1963, with annual supplements through 1964-72 data, were the first two base publications.

Statistics in LIVESTOCK AND MEAT SITUATION update the base data between supplements.

LIVESTOCK MARKET NEWS REPORTS. Available in the Federal-State Market News Service Offices in cities throughout the country. Apply for subscription or mailing list privilege.

LIVESTOCK SLAUGHTER AND MEAT PRODUCTION. Washington, D.C.: U.S. Department of Agriculture, Crop Reporting Board, 1959-- . Monthly, with annual summary. Published as LIVESTOCK SLAUGHTER, 1949-56.

## Dairy

DAIRY MARKET STATISTICS. Washington, D.C.: U.S. Department of Agriculture, Statistical Reporting Service. Annual.

DAIRY SITUATION. Washington, D.C.: U.S. Department of Agriculture, Economic Research Service, 1931-- . 5/year.

Published March, May, July, September, December. Summaries and trends in each issue. Reviews export-import trade impact on U.S. dairy industry. Carries statistical tables in every issue on all aspects of the industry.

DAIRY STATISTICS, 1960-67. Statistical Bulletin no. 430. Washington, D.C.: U.S. Department of Agriculture, Statistical Reporting Service, 1968.

Brings up to date DAIRY STATISTICS THROUGH 1960. Statistical Bulletin 303. These two bulletins, no. 303 and no. 430, bring together a collection of economic information from 1959-67 available data. Statistics can be updated between additional supplements with those appearing in issues of DAIRY SITUATION.

MILK PRODUCTION. Washington, D.C.: U.S. Department of Agriculture, Crop Reporting Board, 1936-- . Monthly, with annual summary.

## Swine

CROP RELEASES. Washington, D.C.: U.S. Department of Agriculture, Crop Reporting Board.

HOGS & PIGS. 1969-- . Quarterly. Previously titled PIG CROP REPORT, 1936-69.

HOG INVENTORY AND PIG CROPS, BY STATES, 1960-64; revised estimates, December 1966. Statistical Bulletin no. 383. 27 p.

Continues PIG CROPS BY STATES, Statistical Bulletin no. 187, July 1956, and supplemented January 1961. With Bulletins no. 187 and no. 383, statistics for years 1930-64 are covered.

Quarterly issues of HOGS & PIGS update these basic statistics.

## Sheep and Goats

CROP RELEASES. Washington, D.C.: U.S. Department of Agriculture, Crop Reporting Board.

SHEEP & LAMBS ON FEED. 1948-- . 3/year.

SHEEP & GOATS. 1973-- . Annual

Previously published in LIVESTOCK AND POULTRY INVENTORY. Statistics on goats published from 1936 in other livestock reports.

### Poultry and Egg Production

CROP RELEASES. Washington, D.C.: U.S. Department of Agriculture, Crop Reporting Board.

BROILER HATCHERY. 1962-- . Every Wednesday from twenty-one states.

CHICKENS, EGGS & BROILERS. 1975-- . Annual. Published under different title, 1953-74.

COMMERCIAL BROILERS. 1963-- . Annual.

EGGS, CHICKENS & TURKEYS. 1970-- . Monthly.

Published monthly in CROP PRODUCTION reports at intervals, 1944-69.

EGG PRODUCTS (under Federal Inspection). 1972-- . Monthly.

Published under various titles from 1940.

HATCHERY PRODUCTION. 1974-- . Annual.

Published monthly from 1942-49; in EGGS, CHICKEN, & TURKEYS, 1970-73.

LAYERS & EGG PRODUCTION. 1974-- . Annual.

Previously EGGS, CHICKENS & TURKEYS. Published under various titles from 1946.

POULTRY SLAUGHTER. 1961-- . 12/year.

Under varying titles from 1944.

TURKEYS. 1975-- . 3/year.

Released under three separate titles.

THE NATIONAL POULTRY AND TURKEY IMPROVEMENT PLANS AND AUXILIARY PROVISIONS. Miscellaneous Publication no. 739. Beltsville, Md.: U.S. Department of Agriculture, Agricultural Research Service, June 1965. 41 p.

National Poultry Improvement Plans became effective 1 July 1935, to be used in cooperation with state authorities in administering regulations for improvement of poultry products and hatcheries. The purpose of the plans is to reduce losses from hatchery-disseminated diseases. The provisions are changed from time to time to conform with developments in the industry. Changes are based on recommendations made at the biennial National Plans Conference by official delegates who represent participating flock owners, breeders, and hatchery owners. Turkeys were added to the plans 23 September 1943.

Revisions of Miscellaneous Publication no. 739 issued since 1960: May 1961, April 1963, and this June 1965 release.

Release after the 1968 conference was not available for examination.

Changes recommended at the July 1968 conference in Cincinnati, Ohio, included specific provisions for preparation of participating flock terminology and classification.

POULTRY AND EGG SITUATION. Washington, D.C.: U.S. Department of Agriculture, Economic Research Service, 1937-- . 5/year.

Articles, summary, and outlook. Statistical tables.

POULTRY AND EGG STATISTICS THROUGH 1972. Statistical Bulletin no. 525. Washington, D.C.: U.S. Department of Agriculture, Commodity Economics Division, February 1974. 61 p. Tables.

Designed for use with POULTRY AND EGG SITUATION.

For the entire United States, statistics reporting on laying poultry, eggs, poultry meat, disposition and value, federally inspected slaughtering. Includes ready-to-cook chicken and turkey inspected for further processing, by months. Supply and utilization statistics for eggs, chicken, turkey. Per capita consumption and prices for shell eggs, broiler, turkey and red meat, by quarters. Further detail on prices of eggs, broilers, hens, turkeys, feed. Statistics on hatchings, storage, and trade. Also, exports and USDA purchase contracts.





Part 5

OTHER AGRICULTURAL ENTERPRISES



## Chapter 1

### RABBITS FOR MEAT

British Oil & Cake Mills. Poultry Advisory Board. RABBIT PRODUCTION. London: Unilever House, 1964. 27 p. Illus., charts, tables.

Discusses the market for rabbit meat and its nutrient qualities. Management of rabbits--breeds, housing, feeding, feeds, the factors affecting profitability.

Casady, Robert B., et al. COMMERCIAL RABBIT RAISING. Agricultural Handbook no. 309. Washington, D.C.: U.S. Department of Agriculture, 1966. 69 p. Illus.

This handbook answers questions about rabbits most frequently asked of agricultural field officers.

Faivre, Milton I. HOW TO RAISE RABBITS FOR FUN AND PROFIT. Chicago: Nelson-Hall Co., [1973]. 212 p. Illus.

A guide for the beginner, through all phases and special problems of rabbit production management.

Chapter 12: "Processing for Market," pp. 153-60, has a section: "Slaughter Houses," pp. 199-202.

Useful tables and lists for information: rabbit breeds and varieties by breed, weight, color, use, pages 29-21; common ailments and their treatment are given with names of diseases, external symptoms, internal lesions, cause, prevention, treatment.

Jones, C.M. "The A to Z of Rabbit Husbandry." COMMERCIAL RABBIT 2 (Winter 1973): 15.

National Research Council. Committee on Animal Nutrition. NUTRIENT REQUIREMENTS OF RABBITS. Washington, D.C.: National Academy of Sciences, 1966. v, 17 p.

Netherway, Marjorie E.P. A MANUAL FOR RABBIT FARMING. Bradford, England: Fur and Feather, 1973. 116 p. Illus.

Steers the novice through the essentials of managing a rabbit farm for profit.

Chapter 1: "The Rabbitry," pp. 11-30 discusses the housing of rabbits.

Chapter 5: "Economics," pp. 95-102, gives examples of forms for record keeping; analyzes markets and market outlets.

Food composition of rabbit meat, page 103.

"The Rabbit Raisers." THE FARM INDEX (March 1970): 8-9.

Gives statistics on production per doe, rabbit as meat, relation to poultry as a meat source, investment in rabbitries, and so on.

SELECTING AND RAISING RABBITS. Agricultural Information Bulletin no. 358. Washington, D.C.: U.S. Department of Agriculture, Agricultural Research Service, 1972. 24 p. Illus.

An informative bulletin which discusses and illustrates the management practices for a productive rabbit enterprise. Shows examples of hutch cards, production record, breeding record.

Templeton, George S. DOMESTIC RABBIT PRODUCTION. Danville, Ill.: Interstate Printers & Publishers, [1968]. 213 p. Illus. Glossary, reading list.

The author writes from twenty-three years experience in teaching rabbit production. His book includes, along with basic management practices, many specific problems and how to handle them. For example: how to handle rabbits and why; nest box management; care during critical temperatures. He discusses the rabbit's behavior--cannibalism, hutch chewing, fur eating, and so forth.

Chapter 7: "Meat Production," pp. 117-24, for fryer-and roaster-size rabbits.

Chapter 9: "Marketing [Rabbits] for Meat," pp. 131-39.

U.S. Federal Trade Commission. TRADE PRACTICE RULES FOR THE RABBIT INDUSTRY. Washington, D.C.: Promulgated June 27, 1958. 8 p.

Defines the industry and its products. Gives eight rules governing the conduct of rabbit breeding, fur, or meat business.

Villiard, Paul. RAISING SMALL ANIMALS FOR FUN AND PROFIT. New York: Winchester Press, [1973]. 160 p. Illus.

Chapter 19: "Rabbits," pp. 114-19, gives a brief description of breeds, housing, sanitation, feeds, feeding, water, handling, breeding.

## Chapter 2

### BEES AND BEEKEEPING

Adams, John F. BEEKEEPING, THE GENTLE CRAFT. New York: Doubleday & Co., 1972. 182 p. Illus., reading list.

Coverage of the art of beekeeping. Special chapters highlighted here.

Chapter 4: "Hiving a Packaged Swarm," pp. 49-64.

Chapter 7: "Hive Management," pp. 93-117.

Description, pages 170-72, of propolis and its use in the hive.

BEEKEEPING ADVANCED SHORT COURSE. Brandon: University of Manitoba, Department of Entomology, 1970. 56 p. Illus.

Papers read at short course sponsored by Extension Service Branch, Manitoba Department of Agriculture and the University, 25-28 February 1970.

"Farm Business Analysis," by F.L. Panquin. Discussed CANFARM, the Canadian Farm Management Data System, and farmer participation by reporting necessary accounts and budgeting.

"Package Bees from Southern British Columbia," by P. Pankiw. Explains management system followed at the Research Station, Beaverlodge, Alberta.

"Pollination," by P. Pankiw. Describes the research program in British Columbia on pollination of high bush blueberries, cranberries, cabbage, sugar beets, apples and cherries, and alfalfa.

BEEKEEPING FOR BEGINNERS. Agricultural Handbook no. 335. Washington, D.C.: U.S. Department of Agriculture, 1971. iii, 147 p. Illus., map.

Comprehensive review of beekeeping. Cites beekeeping regions in the United States. Tabulates, pages 119-24, federal and state bee laws and regulations, 1967; summary of quarantine requirements for intrastate movement of bees and beekeeping equipment, 1967.

Federal and state apiculture activities, pages 125-27: federal research, six field laboratories, sites of state and university research. Research in states with one or more full-time apiculturists is described in terms of location and nature of the research.

Cohan, R. HOW TO MAKE IT ON THE LAND. Englewood Cliffs, N.J.: Prentice-Hall, [1972]. 219 p. Illus.

Chapter 9: "Beekeeping," pp. 65-73, describes beekeeping for the homesteader. Illustrates equipment; lists supply houses.

Crane, Eva, ed. HONEY; A COMPREHENSIVE SURVEY. New York: Crane, Russak & Co., 1974(?). 608 p. Illus.

The book was reviewed in BEE CRAFT (August 1975): 145-46.  
Not available for examination.

Finston, J. David. BEEKEEPING AND THE LAW. CABK Lecture Leaflet. Ilford, England: Central Association of Bee-Keepers, 1966. 15 p. Reading list.

A lecture given before the Central Association of Bee-Keepers at Wax Chandlers Hall, London, 2 December 1965.

Cites four excerpts from the Bee-Keepers Act and recommends four changes which need to be made to avoid controversy.

List of cases, page 15.

Free, John B. CURRENT AND FUTURE DEVELOPMENTS IN POLLINATION AND RESEARCH. Fifth Gooding Memorial Lecture. Ilford, England: Central Association of Bee-Keepers, 1973. 12 p.

Not available for examination.

THE HIVE AND THE HONEY BEE. Rev. ed. Hamilton, Ill.: Dadant & Sons, 1975. 750 p. Illus., tables, charts.

A complete review of bee literature with 1,400 references. The twenty-two chapters reflect changes in scientific knowledge, new management practices, and innovation in other agricultural enterprises.

Chapter 19: "Production of Bees and Package Bees," pp. 559-78.

Chapter 20: "The Use of Bees in Crop Pollination," pp. 559-614.  
Table 2, page 591, gives example of a grower-beekeeper written agreement. Section: "Moving Bees to Crops," pp. 610-12.

INTERNATIONAL APICULTURAL CONGRESS (TWENTY-THIRD), MOSCOW, USSR., AUGUST 27-SEPTEMBER 2, 1971. PROCEEDINGS. Bucharest, Rumania: APIMONDIA Publishing House, 1972. 677 p.

The proceedings coincide "with the seventy-fifth anniversary of the international cooperation of beekeepers in various countries, whose foundations were laid at the first Apicultural Congress held in Brussels, in 1897."

Part 2 of the sessions proceedings include "Papers Delivered at Congress Sessions and Symposia." Chapters include beekeeping economy; bee biology; bee pathology; melliferous flora and pollination; beekeeping technology and equipment.

The congress is held biennially.

Johansson, T.S.K., and Johansson, M.P., comps. APICULTURAL LITERATURE PUBLISHED IN CANADA AND THE UNITED STATES. Bayside, N.Y.: M.P. Johansson, Queensborough Community College, Department of Biology, 1972. 103 p. Author index. Spiral-bound.

The compilers have collated the bee culture collections of ten major libraries for this bibliography. The publications in these collections have been organized in sections: books and pamphlets privately printed are listed together; Canadian government and provincial, U.S. government and state publications; beekeeping association publications--international, national, regional, provincial, state and local; beekeeping journals, trade catalogs, bibliographic sources. The majority of the entries are for materials published before 1940. There is an abbreviation table, pages 4-5.

The bibliographic essay, pages 1-3, covers chronologically the major historical introductions, inventories, and works related to bee culture in the United States and Canada.

Kelley, Walter T. HOW TO KEEP BEES AND SELL HONEY. 5th ed. Clarkson, Ky.: Walter T. Kelley Co., 1968. 112 p. Illus. Paperbound.

Neither the sixth nor the seventh edition, 1973, were available for examination.

The former editor of MODERN BEEKEEPING writes for the commercial beekeeper. Useful also for the part-time beekeeper.

Laidlaw, Harry Hyde, and Eckert, J.E. QUEEN REARING. 2d ed. rev. enl., Berkeley and Los Angeles: University of California Press, 1962. 165 p. Illus.

The history of queen rearing, the queen, the production of queen cells, queen-mating colonies, care of queens, breeding and stock improvement, controlled mating, and the ailments of queen bees.

Examined and annotated by Chia-Lin Wong.

Little, Leslie, and Wallace, Louis D. A BEE BOOK FOR BEGINNERS. 7th ed. Nashville: Tennessee Department of Agriculture, Ellington Agricultural Center, 1969. 77 p.

Luening, Bob. BEEKEEPING RECORDS. Bulletin A2655. Madison, Wis.: Agricultural Bulletin Room, 1974. n.p.

Records for full- or part-time beekeepers to keep in order to analyze economics of their bee business.

Merrill, Julia S. "The Bee Culture Branch of the National Agricultural Library." AMERICAN BEE JOURNAL, September 1963, pp. 326-27.

Describes the history of the largest and most complete apicultural collection in the United States. Since the article was published, many older items in this collection have been housed in the National Agricultural Library at Beltsville. Merrill is now Liaison Librarian for the Department of Agriculture agency libraries.

Morse, Roger A. BEES AND BEEKEEPING. 2d ed. New York: E.P. Dutton & Co., 1974. 219 p. Illus., reading list.

For the commercial beekeeper. Sections cover hive management practices in spring, summer, fall, and winter.

Section on major and minor honey plants, pollination of apple orchards, and other crops. Includes information on bee rental practices.

National Research Council. Committee on African Honey Bee. AFRICAN HONEY BEE. Washington, D.C.: National Academy of Sciences, 1972. 95 p. Map.

Final report of field results in Brazil to compare aggressive African honey bee colonies with domestic bees.

United States and Canada now regulate importation of adult bees but have no control as yet over immature bees.

Beekeepers should follow updates of this and other reports on African bees.

North, Oliver S., comp. "Bee and Honey Patents of the World." Arlington, Va.: Author, n.d. 315 p. Inventor, assignee index. Mimeographed.

Covers all United States and English-language patents on processes and compositions related to beekeeping, honey processing and packing and others on honey products.

Excludes patents for equipment manufactured by commercial firms.

Includes a complete list of 125 patents, classified.

Owens, Charles P., and Cleaver, Thayer. AN ANALYSIS OF BEEKEEPING PRODUCTION COSTS AND RETURNS. Washington, D.C.: U.S. Department



of Agriculture, Economic Production Service, 1973. 13 p. Illus., tables.

Report of a study undertaken to determine annual production costs and returns of beekeepers who had 300 to 6,000 colonies of bees. Information was gathered from eighteen bee enterprises in the mid-west and forty-one in the southwest, randomly selected by state bee inspectors. Survey made by personal interview, using prepared questionnaire.

The tabulated results are analyzed in the text for investments in the beekeeping operation, cash expenses, labor requirements, total costs, income summary.

Root, Amos Ives. THE ABC AND XYZ OF BEE CULTURE: AN ENCYCLOPEDIA PERTAINING TO SCIENTIFIC AND PRACTICAL CULTURE OF BEES. 32d ed. Medina, Ohio: A.I. Root Co., 1962. 703 p. Illus., glossary, chapter biblios.

This guidebook for the beekeeper, first published in 1877, has encyclopedic articles with many illustrations.

Shimanuki, Hachiro. IDENTIFICATION AND CONTROL OF HONEY BEE DISEASES. Washington, D.C.: U.S. Department of Agriculture, 1973. ii, 18 p. Illus.

Discusses brood diseases, fungus diseases, infection, noninfectious diseases, and adult bee diseases. Recommends means and precautions to prevent disease and disease spread.

"Guide for Comparing Characteristics of Various Brood Diseases of the Honey Bee," p. 11.

Smith, Francis Godfrey. ECONOMICS OF BEEKEEPING. Agricultural Bulletin no. 3354. South Perth: Western Australia Department of Agriculture, 1965. 18 p. Illus., tables.

The financial aspects of the beekeeping industry are analyzed including: capital, labor, equipment, cost of producing honey. Gives examples for the commercial beekeeper with 500 hives; the part-timer with 200 hives; the hobbyist with 20 hives.

Stephen, William [A.]. "Beekeeping: A Correspondence Course." Raleigh: North Carolina State College of Agriculture and Engineering, Division of College Extension, 1963. 99 p. Illus. Processed.

Sixteen one-hour assignments and one two-hour laboratory or equivalent.

Study of bees and beekeeping covering history, life within the hive, disease, products, nectar resources, pollination, and management.

\_\_\_\_\_. "Beekeeping Correspondence Course Sixteen." Columbus: Ohio State University, Cooperative Agricultural Extension Service, n.d. Var. pag. Illus. Processed.

Twelve lessons, including examination with each lesson. Covers history, sources of information, races of bees, equipment, honey-flows, location of apiaries.

Stevenson, John Harold. INSECTICIDES AND BEEKEEPING IN ENGLAND. Ilford, England: Central Association of Bee-Keepers, 1973. 9 p. Chapter biblios.

Not available for examination.

Taylor, Richard. "How to Do It: How to Sell Honey by Mail." AMERICAN BEE JOURNAL 114 (January 1974): 12.

\_\_\_\_\_. THE JOYS OF BEEKEEPING. Illustrated by Cheri Shardin. New York: St. Martin's Press, [1974]. 166 p.

Chapter 19: "Keeping Bees for a Living," pp. 157-66. A practical chapter in a philosophical book about beekeeping.

Tucker, Kenneth W., and Roberts, William C. "Honeybees." In THE ARTIFICIAL INSEMINATION OF FARM ANIMALS, edited by Enos J. Perry, p. 314-42. New Brunswick, N.J.: Rutgers University Press, 1968.

A new chapter in this edition on the artificial insemination of the queen bee. Includes references.

## Chapter 3

### FISH CULTURE

#### INTRODUCTION

The pressures to increase production of food protein, coupled with the alarming rate of pollution in fishing waters, have resulted in growing interest among agricultural researchers, biologists, and farmers in the culture of fish in ponds, barrels, raceways, and so forth. Marine biologists and farmers living on coastal plains have been developing ways to farm saltwater fishes and shellfish in estuaries and seacoast waters.

The farmer who is interested in undertaking a fish farming enterprise should talk with researchers in the agricultural experiment station nearest him. Those living on the edge of the sea will want to check with oceanographic research stations in the locality. The selected references here may assist in acquiring background information.

Bardach, John E.; Ryther, John H.; and McLearney, William O. *AQUACULTURE; THE FARMING AND HUSBANDRY OF FRESHWATER AND MARINE ORGANISMS*. New York: John Wiley & Sons, [1972]. xii, 868 p. Illus., tables, diags., chapter bibliis. Indexes: names of animals and plants; persons, places, institutions; subject.

Presents results of a worldwide search in published reports and of interviews with field workers in order to coordinate past and present activities in this field. Bardach is associated with the Hawaiian Institute of Marine Biology. Joint authors are affiliated with the Woods Hole Oceanographic Institution.

Chapters cover all cultivated species. Text includes natural history and characteristics of each species; basic techniques of culture, including diagrams of ponds, ditches, tanks, cages, rafts; water conditions and sources; harvesting and marketing practices. Each chapter has list of references, most dated 1960 or later; list of interviews and personal communications; plus status of current and future research.

Appendix has information on pond siting and construction.

"California Catfish Conference: Proceedings." West Sacramento, Calif.: 20-21 January 1970. vi, 102 p. Mimeographed.

Sponsored by the University of California Agricultural Extension Service, Department of Fish and Game, and the California Soil Conservation Service. [Editor's comment: penciled note on cover of copy examined, "no later conference as of 3/74."]

Papers cover profit and market potential in fish farming; methods in regard to ponds, stock improvement, disease control; harvesting research, 1962-69.

Paper: "Laws Relevant to Catfish Production and Marketing," pp. 84-86, by Bernard E. Faist.

List of registrants from thirteen states, pages 87-102.

Chapman, S.R., et al. "Design and Operation of Earthen Raceways for Channel Catfish Production." Athens, Ga.: U.S. Soil Conservation Service, 1971. 10 p. Reading list. Mimeographed.

This paper was presented at a joint meeting of Southeast Region, Conservation Society of America, and the South Region, American Society of Agricultural Engineers, 31 January-3 February 1971, Jacksonville, Florida.

Reports two years of field trials of this type of fish culture. Covers design and management of the systems recommended by U.S. Soil Conservation Service in Georgia.

FACTORS AFFECTING THE GROWTH AND PRODUCTION OF CHANNEL CATFISH IN RACEWAYS. Technical Assistance Project no. 14-16-0008-571. Stuttgart, Ark.: U.S. Department of the Interior, Bureau of Sport Fisheries and Wildlife, 1962. 98 p.

Prepared by Warmwater Fish Cultural Laboratories, Stuttgart, under contract with the U.S. Department of Commerce, Economic Development Administration.

"Fish Farming Conference: The Catfish Farmers of America: Proceedings." The J. Earl Rudder Conference Tower, Texas A & M University, 3-4 January 1974. College Station: Texas A & M University, 1975. 98 p. Illus., tables. Mimeographed.

Papers cover problems of pesticide residues in water, effect on fish farms; new species; techniques of harvesting; beating the cost-price freeze.

Huet, Marcel. TEXTBOOK OF FISH CULTURE; BREEDING AND CULTIVATION OF FISH. Translated by Henry Kahn. 4th ed. Ipswich, England: Fishing News (Books), [1972]. 436 p. Illus.

A comprehensive guide for the fish culturist, with emphasis on control of growth and breeding.

Techniques and methods for pond construction and maintenance graphically presented. Cultivation of fish; nutrition; protection from disease presented in detail. Harvesting--sorting, grading, storing, transport also thoroughly covered.

Appendix: pp. 420-22, lists principal species with scientific and common names of cultivated fish included in this book.

National Research Council. Committee on Animal Nutrition. NUTRIENT REQUIREMENTS OF TROUT, SALMON, AND CATFISH. Washington, D.C.: National Academy of Sciences, 1973. v, 57 p.

Not available for examination.

## WARMWATER FISH FARMING

Brown, E. Evan, et al. A SYNOPSIS OF CATFISH FARMING. Bulletin no. 69. Athens: University of Georgia, Department of Agricultural Economics, 1969. 50 p. Reading list.

Reports on a survey of the research on all aspects of catfish farming in Georgia.

Seven observations from study of the data, pages 47-48.

COMMERCIAL FISH FARMING CONFERENCE: PROCEEDINGS. Memorial Student Center, Texas A & M University, College Station, Tex., 1-2 February 1967, sponsored by Texas Agricultural Experiment Station, College of Agriculture, Department of Wildlife Science. College Station, Tex.: 1968. 66 p.

Panel on the potential of farm pond production, pages 47-50.

"Fish Farming a Commercial Reality: A Collection of Papers Presented at Technical Session No. 4, Ninety-Ninth Annual Meeting, American Fisheries Society, 12 September 1969, New Orleans, La." Portland, Ore.: Soil Conservation Service, [1969]. 195 p. Mimeographed.

Six papers on commercial fish farming cover state-of-the-art; production and systems of culture; nutrition; disease control and treatment; marketing methods.

FISH FEED TECHNOLOGY AND NUTRITION WORKSHOP: PAPERS. Resource Publication no. 102. Edited by Jean Louis Gaudet. Washington, D.C.: U.S. Department of the Interior, Bureau of Sport Fisheries and Wildlife, 1971. 205 p. In French and English.

A workshop, organized by the Food and Agriculture Organization of the United Nations, was held 7-19 September 1970 at the Warmwater Fish Cultural Laboratories, Stuttgart, Arkansas.

Papers covered three major interests: fish culture technology; fish feed and feeding; warm- and cold-water fish nutrition. Status of drugs in fish culture and problems of pesticide residues also discussed.

Hickling, Charles Frederick. *THE FARMING OF FISH*. Oxford: Pergamon Press, [1968]. vii, 88 p. Illus., reading list.

Stresses importance of water and its quality; the biology of fish. Management responsibility in fish farming and the basis for establishing a fish farm are reviewed. Lists five basic obstacles to fish farming, pages 83-84.

The revised edition, titled *FISH CULTURE*, London: Faber and Faber, 1971, was not available for examination.

Grizzel, Roy A., Jr., et al. *A NEW FARM CROP*. Farmer's Bulletin no. 2244. Washington, D.C.: United States Department of Agriculture, 1969. 22 p. Illus.

The authors are biologists with the Soil Conservation Service. Discussion covers production of blue and white catfish, and all aspects of fish farming from selection of species to markets and marketing.

Lee, Jasper S. *COMMERCIAL CATFISH FARMING*. Danville, Ill.: Interstate Printers & Publishers, [1973]. 278 p. Illus., reading list.

Stresses importance of good management in operation of a catfish farm. Recommends keeping up to date on research findings. Covers all aspects of fish farming. Refers to role of fish farmer in processing and to the value of membership in a fish farmers association.

Appendix A: Length-weight chart for channel catfish.

"List of National Fish Hatcheries." Rev. ed. Fishery Leaflet no. 147. Washington, D.C.: U.S. Department of the Interior, Bureau of Sport Fisheries and Wildlife, 1968. 9 p. Mimeographed.

Lists of state and station, name of hatchery manager, post office address, county, area code and telephone. List of in-service training schools, pages 7-8; fish cultural development centers, page 9.

McCoy, E.W. *CATFISH MARKETING AND RELATED PRODUCTION FACTORS*. Circular no. 206. Auburn, Ala.: Auburn University Agricultural Experiment Station, 1973. 23 p.

Reports on a survey among 703 catfish producers in Alabama who stock more than 1,000 fish. Purpose of survey: to determine

both marketing procedures used by these producers and the problems they encountered. Commercial ponds tend to be near contracting processors.

Mack, Jerry. CATFISH FARMING HANDBOOK. San Angelo, Tex.: Educator Books, 1971. 195 p. Illus.

This handbook is organized for quick reference. Intended to "give the American farmer and rancher a basic knowledge of both the possibilities and the problems of producing catfish commercially."

Gives overall view as well as details. Explains step-by-step all aspects of a beginning operation, based on low budget, for profit-making results.

Covers financing; construction of earthen dams, vats; maintenance; water control; stocking, feeding; fish care; disease and treatment; harvesting, marketing, and prices.

PARASITES AND DISEASES OF WARMWATER FISHES. Resource Publication no. 6. Stuttgart, Ark.: Fish Farming Experimental Station, U.S. Department of the Interior, Bureau of Sport Fisheries and Wildlife, 1961. 20 p. Illus.

Each page, following an introduction, illustrates by line drawing, a parasite and the disease that it causes. In some cases, a page diagram is devoted to the life cycle of an infecting parasite.

Symptoms, susceptible species, possible therapeutic agents are listed. "How to Make a Diagnosis," p. 20.

PRODUCING AND MARKETING CATFISH IN THE TENNESSEE VALLEY, CONFERENCE 30 JUNE-1 JULY 1971. Sponsored by Division of Agricultural Development, Office of Tributary Area Development, Tennessee Valley Authority. Bulletin Y-38. Muscle Shoals, Tenn.: 1971. 96 p. Illus.

"Factors to Consider Before Entering Catfish Farming," pp. 15-18, by J.H. Yeager, covers legal, technical, financial, economic, managerial considerations. Includes research findings.

"The Structure of the Catfish Market," pp. 64-66, by Jim Ayers, gives practical marketing experiences of a processor, restaurateur, and food broker.

Summaries of panel discussion by a banker and a production credit association representative.

Scheffer, Paul M., and Marriage, L. Dean. TROUT FARMING. Leaflet no. 552. Washington, D.C.: U.S. Department of Agriculture, Soil Conservation Service, 1969. 8 p. Illus., map.

For the farmer who is considering a trout production enterprise. Analyzes factors involved in land, water supply, costs, labor, and marketing.



Schmitton, H.R. "Developments in the Culture of Channel Catfish in Cages Suspended in [Earthen] Ponds: A Report." Paper read at Twenty-Third Annual Conference, Southeastern Association of Game and Fish Commissioners, 20-22 October 1969, Mobile, Ala. Auburn, Ala.: Auburn University Agricultural Experiment Station, 1970. 25 p. Reading list. Mimeographed.

Reports on research project at Auburn University Agricultural Experiment Station to evaluate potential of suspended cages in catfish farming. This method had not been used previous to research at Auburn. Contains abstract and summary of findings.

Sedgwick, S. Drummond. TROUT FARMING HANDBOOK. London: Seeley Service, [1973]. 157 p. Illus.

An outline of basic principles of rainbow trout culture in fresh water ponds and in caged structures in water along seashores.

Recommends that the future fish farmer either work on a fish farm for a period of one to three years or employ a fish master as a manager.

Discusses new ideas of using warmed water from a power plant cooling tower in silo production of fish. Also, recycling water from hatchery and fingerling ponds. Refers to little-known results of using hormones for growth in fish.

## SALTWATER FISH FARMING

AGRICULTURAL AND AQUACULTURAL USES OF WASTE HEAT: ENVIRONMENTAL QUALITY PROGRAM. Atomic Energy Commission DRNL-4797. Oak Ridge, Tenn.: Oak Ridge National Laboratory, 1972. 54 p.

Not available for examination.

Allen, George H. REARING PACIFIC SALMON IN SALTWATER PONDS FERTILIZED WITH DOMESTIC WASTE WATER. JULY 1971-JUNE 1972. Publication HSU-SG-4. Arcata, Calif.: Humboldt State University, 1973. 88 p. Illus., charts, chapter bibliis.

Report of a study conducted in two ponds constructed near city of Arcata in the Humboldt Bay area, near terminal unit of the waste-water treatment system. Purpose of the experiment was to test the efficacy of enriching seawater with reclaimed waste water, primarily of domestic sewage origin, to produce a food chain to support fry and fingerling salmonids without supplementary feeding.

[Editor's note: Research using effluent from power stations has been conducted in San Diego; Miami; Hunterston; and Lochailort, Scotland with other species according to newspaper reports. Publications on these experiments were not available for examination.]



Doliber, Earl L. LOBSTERING INSHORE AND OFF. Camden, Me.: International Marine Publishing Co., [1973]. ix, 108 p. Illus., glossary, reading list.

"Commercial Lobster Farming," pp. 87-90.

Iverson, E.S. FARMING THE EDGE OF THE SEA. London: Fishing News (Books), [1968]. 301 p. Illus.

Reviews principles of sea farming activities in temperate and sub-tropical estuary and near-shore waters of the Northern Hemisphere.

Covers presently farmed species: seaweeds, oysters, clams, mussels, shrimps, milkfish, mullet, and miscellaneous pond fishes.

Discusses other invertebrate species with potential for future farming--sponges; conches and abalone; American, European, and spiny lobsters; blue and stone crab. Also other vertebrates, including Tilapia, common pompano, plaice, salmon, trout, and sea turtles.

Reprints checklist prepared by the Bureau of Commercial Fisheries for freshwater fish farmers as a guide for those interested in seawater fish farming, pages 291-93.

MARINE AQUICULTURE; SELECTED PAPERS. Edited by William J. McNeil. Corvallis: Oregon State University Press, [1970]. 172 p. Illus., chapter biblios.

Papers presented at a conference held 23-24 May 1968 in the Oregon State University Marine Science Center, Newport.

Topics related to marine fish and shellfish culture: genetics, nutrition, diseases and parasites; equipment; economics.

Milne, P.H. FISH AND SHELLFISH FARMING IN COASTAL WATERS. London: Fishing News (Books), [1972]. 208 p. Illus., glossary, reading list, experts, geographical, biological indexes.

Concerned with commercial sea farming. General section covers species suited to sea farming; legal aspects and laws related to foreshore and seabed coastal waters.

Gives practical counsel in other sections such as site analysis; equipment such as flotation units; details of design and construction of cages, rafts, and so forth; environmental problems; control of parasites, predators, and pollution.

Chapter 15: "Conclusion: For the Sea Farmer of the 1970's," pp. 174-75, includes recent advances in technology and materials.

Appendix 1: Wind Forces, pp. 176-78; 2: Wave Forces, pp. 179-84. 3: Tidal Forces on Mesh Netting, pp. 185-87; 4: Mesh Net Design Criteria, p. 188; 5: Pile Design Calculations, pp. 189-91.



## Chapter 4

### MAPLE SYRUP

CONFERENCE (8th) ON MAPLE PRODUCTS: PROCEEDINGS. Agricultural Research Service no. 73-73. Philadelphia: Eastern Marketing and Nutrition Research Division, Department of Agriculture, [1972]. 66 p. Illus.

Proceedings of the triannual conference held at Boyne Falls, Michigan. Papers discuss natural vacuum; vacuum-producing equipment for maple syrup operations; reverse osmosis; and regional marketing practices.

Paper: "Review of Maple Syrup Grading Laws," pp. 46-48, by Lloyd H. Sipple.

Report of consumer survey on natural pure maple syrup, with purchasing and use pattern data, as well as packaging preferences, pages 50-56, by P.E. Sendah.

Registration list with name, organization, and address is included.

Costilow, R.N., et al. THE FREQUENCY AND PRACTICABILITY OF DIFFERENT TYPES OF PARAFORMALDEHYDE PELLETS FOR CONTROLLING MICROBIAL GROWTH IN MAPLE TREE TAPHOLES. Preprint from QUARTERLY BULLETIN (Michigan Agricultural Station, East Lansing, Mich.) 44 (February 1962): 559-79.

HOW TO HANG PLASTIC TUBING TO COLLECT MAPLE SAP. USDA Forest Service Research Paper NE-240. Upper Darby, Pa.: Northeastern Forest Experiment Station, 1972. 6 p. Illus. Folder.

Lamb, Bob. NATURAL FLOW MAPLE SAP, PLASTIC TUBE GATHERING SYSTEM. Liverpool, N.Y.: A.C. Lamb & Sons, 1963. 28 p. Illus.

Explains the Lamb system "which is strictly for cooperative effort across the entire maple belt."

MAPLE-SUGARING: THE WAY TO DO IT. A FAMILY ALBUM BY MYRTLE FELLOWS WITH FURTHER COMMENT BY FLOYD FELLOWS. Brattleboro, Vt.: Stephen Greene Press, [1972]. 48 p.

A personalized pictorial presentation showing the techniques of maple-sugaring: from tapping out, through sugar-house operations to straining, grading, and packaging.

Perrin, Noel. *AMATEUR SUGAR MAKER*. Hanover, N.H.: University Press of New England, 1972. 104 p. Drawings by Robert MacLean.

About building a sugar house and making maple syrup.

Robbins, Putnam W., "The Yield of Maple Sap per Taphole," *QUARTERLY BULLETIN* (Michigan Agricultural Experiment Station, East Lansing, Mich.) 43 (August 1960): 142-46. Illus.

Reports a three-year study of maple sap flow and weather relationship at Dunbar Forest Experiment Station, Chippewa County, [Michigan]. The high yield of trees from this managed woodlot demonstrates the production possibilities from an unpastured grove.

Scholl, John C., "Maple Sugar in Sugar and Other Sweeteners." In *FARMER'S WORLD, THE YEARBOOK OF AGRICULTURE*, pp. 183-84. Washington, D.C.: U.S. Department of Agriculture, 1964.

Taylor, Reed D. *PRODUCER MARKETS FOR MAPLE SYRUP IN THE UNITED STATES*. Bulletin 750. University Park: Pennsylvania State University, College of Agriculture, Agricultural Experiment Station, 1968. 44 p.

Packaging, selling channels, marketing practices, profit margins in alternative markets. Tables on marketing statistics for individual states.

U.S. Department of Agriculture. Crop Reporting Board. *MAPLE PRODUCTS; SUGAR AND SYRUP; TREES TAPPED, PRODUCTION, DISPOSITION, PRICE, VALUE, BY STATES, 1916-1959*. Washington, D.C.: 1962. 15 p.

Earlier edition under title, *MAPLE PRODUCTS, 1916-1946*.

Willits, C.O. *MAPLE SYRUP PRODUCERS MANUAL*. Agricultural Handbook no. 134. Washington, D.C.: U.S. Department of Agriculture, Agricultural Research Service, 1965. iii, 112 p. Illus., maps, charts, reading list.

The economics of commercial production from the sugar maple grove, sap yields. Complete coverage of methods and timing for tapping the trees; equipment to use; techniques of syrup processing with description of needed equipment; testing; packaging.

## Chapter 5

### REFERENCE MATERIALS RELATED TO PART 5

#### BIBLIOGRAPHIES

BIBLIOGRAPHY OF AQUACULTURE. Publication no. 71-4. Compiled by Gloria M. Hammach, Coastal Plains Center for Marine Development Services. Washington, D.C.: Center for Biological Sciences Communication, 1971. vii, 245 p. Author, permuted title indexes.

Useful to fish farmers and others oriented to the biological and technical factors involved in aquaculture.

Refers to the culture of saltwater fishes, mollusks and crustaceans in ponds and impoundments, in open bays and seas along coastal plains regions.

Includes periodical articles, association publications, patent literature on commercial firms.

#### PERIODICALS

The addresses for these periodicals are given in part 7: Appendixes.

AMERICAN BEE JOURNAL. Hamilton, Ill.: Dadant & Sons, 1861-- . Monthly.

BRITISH BEE JOURNAL. Northhamptonshire, England: 1873-- . Fortnightly.

CANADIAN BEE JOURNAL. St. Catherines, Ontario: John and Maureen Atkinson, 1892-- . Monthly.

COMMERCIAL FISH FARMER AND AQUACULTURE NEWS. Little Rock, Ark.: 1974-- . Bimonthly.

COMMERCIAL RABBIT. Newberry, Berks., England: 1973-- . Bimonthly.

## Reference Materials

---

COUNTRYSIDE: Waterloo, Wis.: Jerome D. Belager, 1917-- . Monthly.

FISH FARMING INTERNATIONAL. London: Arthur J. Heighway Publishers, 1973-- . Quarterly.

GLEANINGS IN BEE CULTURE. Medina, Ohio: A.I. Root Co., 1873-- . Monthly.

NATIONAL RABBITMAN'S MAGAZINE. Blackwell, Okla.: 1932-- . Monthly.

RABBITS IN CANADA. Bewdley, Ontario: Clay Publishing Co., 1970-- . Monthly.

### ORGANIZATIONS, ASSOCIATIONS, SOCIETIES, INSTITUTES

The addresses of these organizations are given in part 7: Appendixes.  
Publications limited to members.

American Beekeeping Federation (United States)

Publishes NEWSLETTER. 1944-- . Bimonthly.

American Fish Farmers Federation

Maintains a library.

American Rabbit Breeders Association

Maintains a library.

British Bee-Keepers Association

Publishes BEE-CRAFT. 1919-- . Monthly.

Catfish Farmers of America.

Commercial Rabbit Association (England)

International Bee Research Association

Publishes BEE WORLD. 1919/20-- . Quarterly; JOURNAL OF APICULTURAL RESEARCH. 1962-- . Quarterly; APICULTURAL ABSTRACTS. Edited by Eva Crane. 1950-- . Quarterly.

Maintains a library.

International Federation of Beekeepers' Associations

Publishes APIACTA. 1966-- . Quarterly.

Maintains a library.

National Maple Syrup Council

Publishes NATIONAL MAPLE SYRUP DIGEST. 1962-- . Quarterly.

Saskatchewan Department of Agriculture, Aviary Department (Canada)

Southern Beekeepers Association of Queensland (Australia)

U.S. Trout Farmers Association

Victorian Apiarists' Association (Australian)

Publishes AUSTRALIAN BEE JOURNAL. 1918-- . Monthly.

## U.S. GOVERNMENT SERIAL PUBLICATIONS

HONEY. Washington, D.C.: U.S. Department of Agriculture, Crop Reporting Board, 1942-- . Semiannual.

THE PROGRESSIVE FISH-CULTURIST. Washington, D.C.: U.S. Superintendent of Documents, 1938-- , Quarterly.

Technical articles for fish culturists and fishery biologists. Annual index appears in October issue.

REPORT TO THE FISH FARMER. Edited by Fred P. Meyer. Washington, D.C.: U.S. Department of the Interior, Bureau of Sport Fisheries and Wildlife, 1973. 123 p.

Updates the first report, February 1970. Gives annual returns per acre compared to grain crops. Covers situation in fish farming at time report was prepared.





Part 6

URBAN TO RURAL MOVE



## URBAN TO RURAL MOVE

A movement from urban to rural areas by those who yearn to live on the land started in the 1930s and has continued into the 1970s. Several of the publications refer to this movement as "homesteading." The British call it "small-holding"; the Scots, "crofting." All stress that the entire family participate in the decision to leave the activities of the city for the quiet and relative lack of amusement of the country.

Several how-to-do-it books on the rural move are listed below.

Churchill, James E. *THE HOMESTEADER'S HANDBOOK*. Illustrated by Bradford Arnsen. Harrisburg, Pa.: Stackpole Books, 1974. 224 p. Reading list.

Includes a chapter on recycling an old house; useful information about tools and their use; building with natural materials; the water supply.

Covers enterprises for the homesteader: gardening, beekeeping, maple sugar making; sorghum molasses making; farming with horses; meat, milk, and egg production.

Lists books, magazines, and associations helpful to the novice. Closing chapter, "Big Brother Will Help," lists federal agencies, addresses, and services available.

Cohan, R. *HOW TO MAKE IT ON THE LAND*. Englewood Cliffs, N.J.: Prentice-Hall, 1972. 219 p. illus.

"For the individual, couple, or group with little or no financial resources or experiences in farming . . . but a genuine yearning for the soil."

Suggests maple syrup making and beekeeping for small farm projects.

"The Country Beckons." AGRICULTURAL SITUATION 59 (July 1975): 2-4.

This is a review of the address made by Assistant Secretary of Agriculture, Will Erwin, at the Western Governor's Conference, summer 1975. Erwin's remarks covered the accelerated trend toward moving to the country in the 1970s.

Juergenson, Elwood M. FARMING PROGRAMS FOR SMALL ACREAGES. Danville, Ill.: Interstate Printers & Publishers, 1959. 267 p. Illus.

On commercial farming with a few acres. Discusses selection of a farming program from vegetables, crops, poultry and other fowl, livestock. Specialties such as beekeeping, mushroom growing, and fish culture are covered. Suggests combinations of enterprises: dairy and poultry; orchard and grain crops; poultry and berries or vegetables. Stresses farm management and record keeping and illustrates types of records for family farms.

Kains, M.G. FIVE ACRES AND INDEPENDENCE: A PRACTICAL GUIDE TO THE SELECTION AND MANAGEMENT OF THE SMALL FARM. 1935. Introduction by J.E. Oldfield. Reprint. New York: Dover Publications, 1974. 397 p.

Aims at the weekend farmer and the hobbyist.

Chapters 1-5 cover city versus country life; those likely to succeed on the land; ways to fail.

Appendixes have tables that can be aids to the amateur small farmer; also drawings and lists of useful items.

Kaysing, Bill. THE EX-URBANITE'S COMPLETE AND ILLUSTRATED EASY-DOES-IT FIRST-TIME FARMER'S GUIDE; A USEFUL BOOK. San Francisco, Calif.: Straight Arrow Books, [1971]. 319 p. Illus. Reading list, guide to maps, charts, index.

Practical advice for getting established. Chapters on growing small fruits, nuts, and seeds; grasses and grains; livestock; power for first-time farmers; pest control.

Chapter 14: "How to Grow Money," pp. 237-44. The roadside stand and mail-order marketing.

A chapter about farm lore, lists of publications, and sources of supply.

Langer, Richard W. GROW IT: THE BEGINNER'S COMPLETE IN-HARMONY-WITH-NATURE SMALL FARM GUIDE; FROM VEGETABLE AND GRAIN GROWING TO LIVESTOCK CARE. New York: Saturday Review Press, [1972]. xiv, 365 p. Illus., reading list.

Written by an agricultural consultant to aid the city dweller who moves onto the land.

Practical counsel on land, soil, watershed, pond, woodlands. Tillage, farm equipment, and its use. Fertilizer--barnyard manure, green manure, composting, liming.

Catalog of government services, state agricultural stations and addresses, pages 328-51. Also includes sources for purchasing equipment and fertilizers.

Logsdon, Gene. HOMESTEADING; HOW TO FIND NEW INDEPENDENCE ON THE LAND. Emmaus, Pa.: Rodale Press, 1973. 256 p. Illus., chapter biblios.

For the new farmer: what a real homestead is and where to find one; financial resources required.

Chapters cover soil management and drainage; the merging of old and new technologies on the small farm.

Chapter on making money from a roadside stand, grain farming, and livestock enterprise.

In the chapter "What It's All About," twenty-five different hobbies are described for pursuit in leisure time in the quiet of country life.

Robinson, David E. THE COMPLETE HOMESTEADING BOOK: PROVEN METHODS FOR SELF-SUFFICIENT LIVING. Illustrated by Paula Savastano. Diagrams by Douglas Merrilies. Photographs by Charles Wicker. Charlotte, Vt.: Garden Way Publishing Co., [1974]. 249 p.

"The Realities of Homesteading," pp. 20-24; "How to Tell if Homesteading is for You," pp. 24-27.

Gives practical guidance on water, waste disposal, heat and light, in addition to raising food and animals. Covers the homestead community. Adds a chapter with comments made by those who are homesteaders.

Seymour, John, and Seymour, Sally. FARMING FOR SELF-SUFFICIENCY; INDEPENDENCE ON A 5-ACRE FARM. Introduction by Mildred Loomis. Illustrations by Sally Seymour. New York: Schocken Books, [1973]. 250 p. Reading list.

Book on how a British family experienced "smallholding." Chapters simply titled: land, horse, cow, dairy, pig, poultry, grass, wheat, other field crops, fruit and nuts, bees, and so on.

Tiedjens, Victor Alphonse. OLENA FARM, U.S.A., AN AGRICULTURAL SUCCESS STORY. New York: Exposition Press, [1969]. 160 p. Illus.

The story of a retired agronomist-horticulturist-biochemist-soil scientist, and the record of his making a "sub-marginal" farm productive by application of soil science principles.

Vivian, John. THE MANUAL OF PRACTICAL HOMESTEADING. Emmaus, Pa.: Rodale Press Book Division, 1975. 340 p.

Shares with readers the know-how acquired from personal experience. Emphasizes living on the land, not off it, not exploiting, but conserving.

Chapters include selecting a region, finding a homestead, with down-to-earth advice, pages 8-11, for the kind of life and income to be gained.

Among the enterprises suggested is beekeeping. Outlines a management practice, pages 30-55, and discusses "bees before blossoms," pages 124-27.

Other enterprises this author suggests include, "The Chicken Flock," pp. 87-111; section on raising rabbits, pages 113-23. "Queen of the Place: The Dairy Goat," pp. 204-26.

Chapter 11: "Final Harvest," pp. 253-99, is a pictorial how-to on fish cleaning, cleaning and dressing poultry and game; butchering livestock.

Chapter 12: "Bedding Down for Winter," pp. 300-324, includes a section on gathering and cutting firewood for heat.

Part 7

APPENDIXES





## Appendix A

### LIST OF PUBLISHERS

- |   |  |
|---|--|
| A & L Publications<br>Station A, Box F<br>Champaign, Ill. 61820                                   | American Elsevier Publishing Co.<br>52 Vanderbilt Avenue<br>New York, N.Y. 10017                                       |
| Abbott Laboratories<br>Abbott Park<br>North Chicago, Ill. 60064                                   | American Enterprise Institute for<br>Public Policy Research<br>1150 Seventeenth Street, N.W.<br>Washington, D.C. 20036 |
| ABC-CLIO<br>Riviera Campus<br>2040 Alameda Padre Serra<br>Box 4397<br>Santa Barbara, Calif. 93103 | American Library Association<br>Publishing Services<br>50 East Huron Street<br>Chicago, Ill. 60611                     |
| Academic Press<br>111 Fifth Avenue<br>New York, N.Y. 10003  | American Society of Programmetry<br>Falls Church, Va.  |
| Agency for International Development<br>U.S. Department of State<br>Washington, D.C. 20520        | American Supply House<br>P.O. Box 1114<br>Columbia, Mo. 65201  |
| Agricultural Consulting Associates<br>Wooster, Ohio 44691   | Angus & Robertson Pty.<br>102 Glover Street<br>Cremorne, New South Wales<br>2090, Australia                            |
| Agricultural Economic Research<br>Council of Canada<br>Ottawa, Ontario, Canada                    | Annual Reviews<br>4139 El Camino Way<br>Palo Alto, Calif. 94306  |
| George Allen & Unwin<br>Ruskin House<br>40 Museum Street<br>London WC1, England                   | Archon Books<br>Shoe String Press<br>995 Sherman Avenue<br>Hamden, Conn. 06514   |
| American Council on Education<br>1 Dupont Circle<br>Washington, D.C. 20036                        | Arno Press<br>330 Madison Avenue<br>New York, N.Y. 10017   |

## List of Publishers

Edward Arnold & Co.  
25 Hill Street  
London W1X 8LL, England

A. Asher & Co.  
Kreizersgracht 526  
Amsterdam, Netherlands

Auburn Printing Co.  
Auburn, Ala. 36830

Auburn University  
Agricultural Experiment Station  
Auburn, Ala. 36830

AVI Publishing Co.  
P.O. Box 831  
Westport, Conn. 06880

Bancroft-Whitney Co.  
301 Brannan Street  
San Francisco, Calif. 94107

Bargyla & Gylver Rateaver  
Pauma Valley, Calif. 92061

Blackwell Scientific Publications  
Osney Mead  
Oxford OX2 0E1, England

Geoffrey Bles/Garstone Press  
59 Brompton Road  
London SW3 1DS, England

British Oil & Cake Mills  
Unilever House  
London, England

Burgess Publishing Co.  
7108 Ohms Lane  
Minneapolis, Minn. 55435

Butterworth & Co.  
88 Kingsway  
London WC2 B6AB, England

Cambridge University  
School of Agriculture  
Cambridge, England

Cambridge University Press  
Bentley House  
200 Euston Road  
London NW1 2DP, England

Canadian Department of Agriculture  
Ottawa, Ontario, Canada

Hans Carl, Verlag KG  
Breite Gasse 58-60  
Postfach 9910  
D-8500 Nurnberg, West Germany

Cassell & Co.  
35 Red Lion Square  
London WC1R 4SJ, England

Centre d'Etude de L'Azote  
Zurich, Switzerland

Centre for Applied Research in Education  
Order from Prentice-Hall

Centre for Overseas Pest Research  
Foreign and Commonwealth Office  
Overseas Development Administration  
London, England

Chamber of Commerce of the United States  
1615 H Street, N.W.  
Washington, D.C. 20006

Chapman & Hall  
11 New Fetter Lane  
London EC4 P4EE, England

Chatto & Windus  
40-42 William IV Street  
London WC2N 4DF, England

Chemical Publishing Co.  
200 Park Avenue, S.  
New York, N.Y. 10003

Coastal Plain Station  
University of Georgia Agricultural  
Experiment Stations  
Tifton, Ga. 31794

Colorado State University  
Fort Collins, Colo. 80521

Columbia University Press  
562 West 113th Street  
New York, N.Y. 10025

Commonwealth Agricultural Bureaux  
Farnham Royal, Slough  
SL2 3BN, England

Comstock Publishing Associates  
124 Roberts Place  
Ithaca, N.Y. 14850

Cornell University  
Department of Animal Science  
Ithaca, N.Y. 14850

Cornell University Press  
124 Roberts Place  
Ithaca, N.Y. 14850

Council of State Governments  
P.O. Box 11910  
Lexington, Ky. 40511

Crane, Russak & Co.  
347 Marison Avenue  
New York, N.Y. 10017

CRC Press  
189-1 Cranwood Parkway  
Cleveland, Ohio 44128

Crosby Lockwood Staples  
Park Street  
St. Albans, Herts AL2 2NF, England

Dadant & Sons  
Hamilton, Ill. 62341

David & Charles  
South Devon House  
Newton Abbot, Devon, England

Marcel Dekker  
270 Madison Avenue  
New York, N.Y. 10016

Doane Agricultural Service  
8900 Manchester Road  
St. Louis, Mo. 63144

Doubleday & Co.  
245 Park Avenue  
New York, N.Y. 10017

Dover Publications  
180 Varick Street  
New York, N.Y. 10014

Drake Publishers  
381 Park Avenue, S.  
New York, N.Y. 10016

E.P. Dutton & Co.  
201 Park Avenue, S.  
New York, N.Y. 10003

Eastern Marketing and Nutrition  
Research Division  
Agricultural Research Service  
U.S. Department of Agriculture  
600 East Mermaid Lane  
Philadelphia, Pa. 19118

East of Scotland College of  
Agriculture  
Edinburgh, Scotland

Educational Methods  
500 North Dearborn Street  
Chicago, Ill. 60610

Educator Books  
P.O. Drawer 32, 10 North Main  
San Angelo, Tex. 76901

J.W. Edwards Publishing Co.  
2500 South State Street  
Ann Arbor, Mich. 48104

Elsevier Publishing Co.  
(Associated Scientific Publishers)  
Box 211

Jan van Galestraat 335  
Amsterdam, Netherlands

## List of Publishers

---

Environmental Protection Agency  
Washington, D.C. 20460

Estates Gazette  
151 Warour Street  
London W1V 4BN, England

Exposition Press  
900 South Oyster Bay Road  
Hicksville, N.Y. 11801

Faber and Faber  
3 Queen Square  
London WC1 N3AU, England

Farming Press  
Fenton House, Wharfedale Rd.  
Ipswich, Suffolk IP1 4LG, England

Federal Trade Commission  
Washington, D.C. 20580

Feed Production School  
Kansas City, Mo.

J.G. Ferguson Publishing Co.  
6 North Michigan Avenue  
Chicago, Ill. 60602

Fishing News (Books)  
1 Long Garden Walk  
Farnham, Surrey, England

Food and Agricultural Organization  
of the United Nations  
Rome, Italy

U.S. Agent: UNIPUB  
Box 433  
Murray Hill Station  
New York, N.Y. 10016

W.H. Freeman & Co. Publishers  
600 Market Street  
San Francisco, Calif. 94104

Fur and Feather  
(British Rabbit Council)  
Watmoughs  
Idle, Bradford, England

Gale Research Co.  
Book Tower  
Detroit, Mich. 48226

Garden Way Publishing Co.  
Charlotte, Vt. 05445

Georgia Institute of Technology  
Engineering Experiment Station  
Atlanta, Ga. 30332

Great Britain Ministry of Agriculture  
Fisheries and Food  
London, England

Stephen Greene Press  
Feesenden Road  
Brattleboro, Vt. 05301

Greenwood Press, Inc.  
51 Riverside Avenue  
Westport, Conn. 06880

Greystone Corp.  
(Greystone Press)  
225 Park Avenue, S.  
New York, N.Y. 10003

Grid  
4666 Indianola Avenue  
Columbus, Ohio 43214

Hafner Press  
866 Third Avenue  
New York, N.Y. 10022

Hamlyn Publishing Group  
Hounslow Road  
Feltham TW14 9AR, England

Harper & Row, Publishers  
10 East Fifty-third Street  
New York, N.Y. 10022

Harvard Business School  
Division of Research  
c/o Harvard University Press  
Cambridge, Mass. 02138

Harvard University Press  
79 Garden Street  
Cambridge, Mass. 02138

Hawthorn Books  
260 Madison Avenue  
New York, N.Y. 10016

D.C. Heath & Co.  
125 Spring Street  
Lexington, Mass. 02173

Her Majesty's Stationery Office  
London, England

Leonard Hill Books  
24 Marquet Square  
Aylesbury, Bucks, England

Holt, Rinehart and Winston  
383 Madison Avenue  
New York, N.Y. 10017

Humboldt State University  
Arcata, Calif. 95521

W.F. Humphrey  
280 Main Street  
Geneva, N.Y. 11735

Hutchinson Publishing Group  
3 Fitzroy Square  
London W1P 6JD, England

Iliff Books  
See Butterworth & Co

Imperial Chemical Co.  
London, England

Input-Output Co.  
London, England

Institute for Scientific Information  
325 Chestnut Street  
Philadelphia, Pa. 19106

International Marine Publishing Co.  
Camden, Maine 04843

Interstate Printers & Publishers  
19-27 North Jackson Street  
Danville, Ill. 61832

Iowa State University Press  
South State Avenue  
Ames, Iowa 50010

Irish University Press  
81 Merrion Square  
Dublin 2, Ireland

Israel Ministry of Agriculture  
Tel-Aviv, Israel

M.P. Johansson  
c/o Queensborough Community College  
Department of Biology  
Bayside, N.Y. 11301

Johns Hopkins University Press  
Baltimore, Md. 21218

Johnson Publishing Co.  
P.O. Box 217  
Murfreesboro, N.C. 27855

Dr. W. Junk N.V. Publishers  
The Hague, Netherlands

Augustus M. Kelley, Publishers  
305 Allwood Road  
Clifton, N.J. 07012

Walter T. Kelley Co.  
Clarkson, Ky. 40505

A.C. Lamb & Sons  
P.O. Box 278, Vine Street Road  
Liverpool, N.Y. 13088

Land Books  
See Hutchinson Publishing Group

The Lawyers Co-operative  
Publishing Co.  
Aqueduct Building  
Rochester, N.Y. 14603

## List of Publishers

---

Lea & Febiger  
600 South Washington Square  
Philadelphia, Pa. 19106

J.B. Lippincott, Co.  
521 Fifth Avenue  
New York, N.Y. 10017

Longman Group  
Longman House  
Burnt Hill, Harlow, Essex, England

Louisiana State University Press  
Baton Rouge, La. 70803

MacDonald & Co. Pty.  
St. Giles House  
49/50 Poland Street  
London W1A 2LG, England

William MacDonald & Co.  
7 Abbey Street  
Edinburgh EH7 5SJ, Scotland

MacDonald College  
Quebec, Canada

McGraw-Hill Book Co.  
1221 Avenue of the Americas  
New York, N.Y. 10036

Macmillan  
866 Third Avenue  
New York, N.Y. 10022

C.L.R. Mast & Associates  
2041 Vardon Lane  
Flossmoor, Ill. 60422

Meister Publishing Co.  
Willoughby, Ohio 44094

Melbourne University Press  
Victoria, Australia

Merck & Co.  
Rayway, N.J. 07065

Meredith Corp.  
Consumer Book Division  
1716 Locust Street  
Des Moines, Iowa 50336

Charles E. Merrill Publishing Co.  
1300 Alum Creek Drive  
Columbus, Ohio 43216

Michigan State University  
Agricultural Experiment Station  
East Lansing, Mich. 48823

Michigan State University  
Rural Manpower Center  
East Lansing, Mich. 48823

Michigan State University Press  
1405 South Harrison Road  
25 Manly Miles Building  
East Lansing, Mich. 48823

Miller-Freeman Publishing  
500 Howard Street  
San Francisco, Calif. 94105

Miller Publishing Company  
See Miller-Freeman Publishing

Montana Agricultural Experiment  
Station  
Bozeman, Mont. 59715

Monterrey Technical Institute and  
Advanced Studies  
Monterrey, Mexico

Morrison Publishing Co.  
Clinton, Iowa

William Morrow & Co.  
105 Madison Avenue  
New York, N.Y. 10016

MSS Information Corp.  
655 Madison Avenue  
New York, N.Y. 10021

John Murray, Publishers  
50 Albemarle Street  
London W1X 4BD, England

National Academy of Sciences  
Printing & Publishing Office  
2101 Constitution Avenue, N.W.  
Washington, D.C. 20418

National Agricultural Library  
U.S. Department of Agriculture  
Beltsville, Md. 20270

Nelson-Hall Co.  
325 West Jackson Boulevard  
Chicago, Ill. 60614

Netherlands Ministry of Agriculture  
and Fisheries  
Horticultural Division  
The Hague, Netherlands

New Jersey Agricultural Experiment  
Station  
Rutgers-The State University  
New Brunswick, N.J. 08903

New York School of Industrial and  
Labor Relations  
Cornell University  
Ithaca, N.Y. 14850

Oliver S. North  
Arlington, Va.

North Carolina State College of  
Agriculture and Engineering  
Division of College Extension  
Raleigh, N.C. 27607

North Carolina State University  
Agricultural Experiment Station  
Raleigh, N.C. 27611

W.W. Norton & Co.  
500 Fifth Avenue  
New York, N.Y. 10036

Nottingham University School of  
Agriculture  
Sutton Bonington, England

Oak Ridge National Laboratory  
Oak Ridge, Tenn. 37830

O'Connor Printers  
3600 South Duluth Avenue  
Sioux Falls, S.Dak. 57105

OECD, Bureau of Documentation  
and Publications  
UNESCO House, Place de Fontenoy  
75700, Paris

or

U.S. Office of OECD  
1750 Pennsylvania Avenue, N.W.  
Washington, D.C. 20006

Ohio State University  
Cooperative Agricultural Extension  
Service  
Columbus, Ohio 43210

Oklahoma State University Agricul-  
tural Experiment Station  
Stillwater, Okla. 74074

Oliver & Boyd  
Tweedale Court  
14 High Street  
Edinburgh EH1 1YL, Scotland

Oregon State University Press  
Corvallis, Oreg. 97330

Organisation for Economic Coopera-  
tion and Development (U.S. Of-  
fice)

1750 Pennsylvania Avenue, N.W.  
Washington, D.C. 20007

Oxford University Press  
Ely House, 37 Dover Street  
London W1X 4AH, England

Oyez  
Distributed by Serendipity Books  
1790 Shattuck Ave.  
Berkeley, Calif. 94709

Parsons Horticultural Services  
45 Brompton Road  
London SW1, England

C. Arthur Pearson  
See Hamlyn Publishing Group

Penguin Books  
72 Fifth Avenue  
New York, N.Y. 10011

## List of Publishers

Pennsylvania State University Cooper-  
ative Extension Service  
University Park, Pa. 16802

Pergamon Press  
Headington Hill Hall  
Oxford OX3 OBW, England

Charles Pfizer Co.  
235 East Forty-second Street  
New York, N.Y. 10017

Porcupine Press  
1317 Filbert Street  
Philadelphia, Pa. 19107

Praeger Publishers  
111 Fourth Avenue  
New York, N.Y. 10003

Prentice-Hall  
Englewood Cliffs, N.J. 07632

Purdue University  
Experiment Station  
Lafayette, Ind. 47909

Putman & Sons  
Pitman House  
39 Parker Street  
Kingsway, London WC2 5PB, England

A.H. & A.W. Reed Pty.  
182 Wakefield Street  
Wellington 1, New Zealand

Rodale Press  
33 East Minor Street  
Emmaus, Pa. 18049

Ronald Press Co.  
79 Madison Avenue  
New York, N.Y. 10016

A.E. Root & Co.  
Medina, Ohio 44256

Rowman & Littlefield  
81 Adams Drive  
Totowa, N.J. 07512

Royal Horticultural Society  
Vincent Square  
London SW1P 2PE, England

Rutgers-The State University  
New Brunswick, N.J. 08903

Rutgers University Press  
30 College Avenue  
New Brunswick, N.J. 08901

St. Martin's Press  
175 Fifth Avenue  
New York, N.Y. 10010

Saturday Review Press  
E.P. Dutton & Co.  
201 Park Avenue, S.  
New York, N.Y. 10003

Schocken Books  
200 Madison Avenue  
New York, N.Y. 10016

Selley Services & Co.  
196 Shaftsbury Avenue  
London WC2H 8JL, England

Southern Regional Education Board  
130 Sixth Street, N.W.  
Atlanta, Ga. 30313

Special Libraries Association  
235 Park Avenue, S.  
New York, N.Y. 10003

Springer Publishing Co.  
200 Park Avenue, S.  
New York, N.Y. 10003

Stackpole Books  
Cameron and Kelker Streets  
Harrisburg, Pa. 17105

Stipes Publishing Co.  
10-12 Chester Street  
Champaign, Ill. 61820

Straight Arrow Books  
Division of Rolling Stone  
625 Third Street  
San Francisco, Calif. 94107



Structures Publishing Co.  
P.O. Box 423  
Farmington, Mich. 48024

Tennessee Department of Agriculture  
Ellington Agricultural Center  
Nashville, Tenn. 37235

Tennessee Valley Authority  
Office of Tributary Area Development  
Division of Agricultural Development  
Muscle Shoals, Ala. 35660

Texas A & M University  
College Park, Tex. 77843

Texas Technological College  
International Center for Arid and  
Semi-Arid Land Studies  
Lubbock, Tex. 79409

Thomson Publications  
P.O. Box 50160  
Indianapolis, Ind. 46256

Twentieth Century Fund  
41 East Seventieth Street  
New York, N.Y. 10021

United Publishing Corp.  
1316 Arch Street  
Philadelphia, Pa. 19107

U.S. Department of Agriculture  
Forest Service, Center Building  
6808 Market Street  
Upper Darby, Pa. 19082

U.S. Government Printing Office  
Washington, D.C. 20240

U.S. Office of OECD  
See OECD, Bureau of Document-  
ation and Publications

U.S. Soil Conservation in Georgia  
Athens, Ga. 30602

University of Arizona Press  
P.O. Box 3398  
Tucson, Ariz. 85722

University of California  
Division of Agricultural Science  
Berkeley, Calif. 94720

University of California  
Dry Lands Research Institute  
Riverside, Calif. 92517

University of California Press  
2223 Fulton Street  
Berkeley, Calif. 94720

University of Connecticut  
Agricultural Experiment Station  
Storrs, Conn. 06268

University of Florida Press  
Gainesville, Fla. 32601

University of Georgia Agricultural  
Experiment Stations  
Athens, Ga. 30602

University of Georgia  
Department of Agricultural Economics  
Athens, Ga. 30602

University of Georgia Press  
Waddell Hall  
Athens, Ga. 30602

University of Illinois  
College of Agriculture  
Department of Agricultural Engineering  
Urbana, Ill. 61820

University of Illinois Press  
Urbana, Ill. 61801

University of Kansas Press  
Lawrence, Kans. 66044

University of Kentucky  
College of Agriculture Cooperative  
Extension Service  
Lexington, Ky. 40506

University of Kentucky  
Department of Agronomy  
Lexington, Ky. 40506

## List of Publishers

---

University of Kentucky  
Department of Horticulture  
Lexington, Ky. 40506

University of Leeds  
Department of Agriculture  
Economics Section  
Leeds, England

University of Manitoba  
Department of Entomology  
Winnipeg, Manitoba, Canada

University of Manitoba  
Office of the Dean of Agriculture  
Winnipeg, Manitoba, Canada

University of Maryland  
Agricultural Experiment Station  
College Park, Md. 20742

University of Massachusetts  
Agricultural Experiment Station  
Amherst, Mass. 01002

University of Minnesota  
Agricultural Experiment Station  
Minneapolis, Minn. 55455

University of Minnesota Press  
2037 University Avenue, S.E.  
Minneapolis, Minn. 55455

University of Nebraska Press  
901 North Seventeenth Street  
Lincoln, Nebr. 68508

University of Nevada  
College of Agriculture Cooperative  
Extension Service  
Reno, Nev. 89507

University of Oklahoma Press  
1005 Asp Avenue  
Norman, Okla. 73069

University of Queensland Press  
St. Lucia, Brisbane  
Queensland 4067, Australia

University of Toronto Press  
St. George Campus  
Toronto 181, Ontario, Canada

University of Wisconsin  
Cooperative Extension Program  
Madison, Wis. 53706

University of Wisconsin Agricultural  
Extension International  
Cooperative Training Center  
Madison, Wis. 53706

University of Wisconsin Press  
P.O. Box 1379  
Madison, Wis. 53706

University Presses of Florida  
15 Northwest Fifteenth Street  
University of Florida  
Gainesville, Fla. 32611

University Press of Kansas  
366 Watson Library  
Lawrence, Kans. 66044

University Press of New England  
P.O. Box 979  
Hanover, N.H. 03755

Utah State University  
Logan, Utah 84321

Van Nostrand Reinhold Co.  
450 West Thirty-third Street  
New York, N.Y. 10001

Virginia Polytechnic Institute  
Extension Division  
Blacksburg, Va. 24060

Wadsworth Publishing Co.  
Davis Drive  
Belmont, Calif. 94002

Walker & Co.  
720 Fifth Avenue  
New York, N.Y. 10019

Ward Lock  
Warwick House  
116 Baker Street  
London W1M 2BB, England

Warmwater Fish Cultural Laboratories  
Bureau of Sports Fish and Wildlife  
U.S. Department of the Interior  
Stuttgart, Ark. 72160

Washington State University  
Cooperative Extension Service  
Pullman, Wash. 99163

Water Information Center  
44 Sintsink Drive, E.  
Port Washington, N.Y. 11050

Western Australia Department of  
Agriculture  
South Perth, Australia

John Wiley & Sons  
605 Third Avenue  
New York, N.Y. 10016

Wiley-Interscience  
605 Third Avenue  
New York, N.Y. 10016

Williams & Wilkins Co.  
428 East Preston Street  
Baltimore, Md. 21202

H.W. Wilson Co.  
950 University Avenue  
Bronx, N.Y. 10452

Winchester Press  
205 East Forty-second Street  
New York, N.Y. 10017

Wye College  
Department of Agricultural Economics  
Ashford, England

Wye College  
Department of Economics  
Ashford, England



## Appendix B

### LIST OF PERIODICALS

Abstracts of Entomology  
Biosciences Information Service of  
Biological Abstracts  
2100 Arch Street  
Philadelphia, Pa. 19103

American Bee Journal  
Dadant & Sons  
Hamilton, Ill. 62341

American Fruit Grower  
Meister Publishing Co.  
37841 Euclid Avenue  
Willoughby, Ohio 44094

American Potato Journal  
Potato Association of America  
114 Deering Hall  
University of Maine  
Orono, Maine 04473

American Vegetable Growers  
Meister Publishing Co.  
37841 Euclid Avenue  
Willoughby, Ohio 44094

Animal Breeding Abstracts  
Commonwealth Agricultural Bureaux  
Farnham Royal, Slough, SL2 3BN,  
England

Animal Nutrition and Health  
83 Stevenson Street  
San Francisco, Calif. 94105

APIATA (International Federation of  
Beekeepers Association)  
Corso Vittorio Emanuele 101  
100186 Rome, Italy

Apicultural Abstracts  
International Bee Research Association  
Hill House, Chalfont St. Peter  
Bucks SL9 0NR, England

Australian Bee Journal  
Victorian Apiarist's Association  
Box 313, Wangaratta  
Victoria 3677, Australia

Bee-Craft (British Beekeepers'  
Association)  
13 Orchard Road  
Littlebourne  
Canterbury, Kent, England

Bee  
Webb Publishing Co.  
1999 Shepard Road  
St. Paul, Minn. 55116

Bee World (International Bee Research  
Association)  
Hill House, Chalfont St. Peter  
Bucks SL9 0NR, England

Big Farmer  
131 Lincoln Highway  
Frankfort, Ill. 60423

## List of Periodicals

---

British Bee Journal  
46 Queen Street  
Geddington, near Kettering  
Northamptonshire, England

Broiler Industry  
Garden State Publishing Co.  
4411 Landis Avenue  
Sea Isle City, N.J. 08243

Canadian Bee Journal  
47 Black Knight Road  
St. Catharines, Ontario, Canada

Citrus Industry Magazine  
Box 89  
Bartow, Fla. 33830

Commercial Fish Farmer and  
Aquaculture News  
P.O. Box 2451  
Little Rock, Ark. 72203

Commercial Rabbit  
Cone Publications  
Newbury, Berks, England

Countryside  
Route 1, Box 238  
Waterloo, Wis. 53594

Cranberries, The National Cranberry  
Magazine  
Pilgrim Publishers  
R-55 Summit Street, Box J  
Kingston, Mass. 02364

Current Advances in Plant Science  
Pergamon Press  
Fairview Park  
Elmsford, N.Y. 10523

The Dairy Goat Journal  
Scottsdale, Ariz. 85252

Dairy Science Abstracts  
Commonwealth Agricultural Bureaux  
Farnham Royal, Slough, SL2 3BN,  
England

Egg Industry  
Garden State Publishing Co.  
4411 Landis Avenue  
Sea Isle City, N.J. 08243

Estates Gazette  
151 Wardour Street  
London W1, England

Farm and Garden Equipment Guide  
161-166 Fleet Street  
London EC4 P4AA, England

Farm Equipment Red Book  
Intertec Publishing Company  
1014 Wyandotte Street  
Kansas City, Mo. 64105

The Farmer  
Webb Co.  
1999 Shepard Road  
St. Paul, Minn. 55116

Farm Journal  
230 West Washington Square  
Philadelphia, Pa. 19106

Feedlot Management  
Miller Publishing Co.  
2501 Wayzata Boulevard  
Minneapolis, Minn. 55440

Feed Management  
Garden State Publishing Co.  
Garden State Building  
Sea Isle City, N.J. 08243

Fertilizer Abstracts  
Fertilizer Abstracts Service  
National Fertilizer Improvement  
Center  
Tennessee Valley Authority  
Muscle Shoals, Ala. 35660

Field Crop Abstracts  
Commonwealth Agricultural Bureaux  
Farnham Royal, Slough, SL2 3BN,  
England

Fish Farming International  
Arthur J. Heighway Publications  
Ludgate House, 110 Fleet Street  
London, England

Georgia Agricultural Research  
University of Georgia  
Athens, Ga. 30601

Gleanings in Bee Culture  
A.I. Root Co.  
Medina, Ohio 44256

Grain Bulletin  
Commonwealth Secretariat  
Publications Section  
Marlborough House  
Pall Mall  
London SW1, England

Grain Grower  
United Grain Growers  
Box 6600  
Winnipeg, Manitoba, Canada

The Green Book  
Saracen's Head Buildings  
36-37 Cock Lane  
London EC1A9BY, England

Herbage Abstracts  
Commonwealth Agricultural Bureaux  
Farnham Royal, Slough, SL2 3BN,  
England

Hoard's Dairyman  
W.D. Hoard & Sons Co.  
Fort Atkinson, Wis. 53538

Hog Farm Management  
Miller Publishing Co.  
2501 Wayzata Boulevard  
Minneapolis, Minn. 55405

Horticultural Abstracts  
Commonwealth Agricultural Bureaux  
Farnham Royal, Slough, SL2 3BN,  
England

Irrigation Age  
Webb Publishing Co.  
1999 Shepard Road  
St. Paul, Minn. 55116

Irrigation and Drainage Abstracts  
American Society of Civil Engineers  
345 East Forty-seventh Street  
New York, N.Y. 10017

Job Safety and Health  
Occupational Safety and Health  
Administration  
U.S. Labor Department  
Washington, D.C. 20210

Journal of Agricultural Economics  
Wye College, Agricultural Economics  
Society  
Ashford, Kent, England

Journal of Range Management  
Society for Range Management  
2120 South Birch Street  
Denver, Colo. 80222

Livestock Market Digest  
4900 Oak Street  
Kansas City, Mo. 64112

Marquette Business Review  
Marquette University  
College of Business Administration  
Milwaukee, Wis. 53233

Microbiology Abstracts  
Information Retrieval  
38 Chancery Lane  
London, WC2, England

National Geographic Magazine  
National Geographic Society  
17th and M Streets, N.W.  
Washington, D.C. 20036

National Maple Syrup Digest  
c/o Lloyd Sipple  
Bainbridge, N.Y. 13733

## List of Periodicals

---

The National Rabbitman's Magazine  
Box 613  
Blackwell, Okla. 74630

Nursery Business  
Brantwood Publications  
c/o R.W. Morey, Editor & Publisher  
850 Elm Grove Road  
Elm Grove, Wis. 53122

Nutrition Abstracts & Reviews  
Commonwealth Agricultural Bureaux  
Farnham Royal, Slough, SL2 3BN,  
England

Official Guide: Tractors & Farm  
Equipment  
National Farm and Power Equipment  
Dealers' Association  
2340 Hampton Avenue  
St. Louis, Mo. 63139

Organic Gardening and Farming  
Rodale Press  
33 East Minor Street  
Emmaus, Pa. 18049

Peanut Journal and Nut World  
Peanut Journal Publishing Co.  
Box 347  
Suffolk, Va. 23434

Pest Control  
Harvest Publishing Co.  
9800 Detroit Avenue  
Cleveland, Ohio 44102

Poultry Tribune  
Watt Publishing Co.  
Mt. Morris, Ill. 61054

Prairie Farmer  
Prairie Farmer Publishing Co.  
2011 Spring Road  
Oak Brook, Ill. 60521

Progressive Farmer  
Progressive Farmer Co.  
Box 2581  
Birmingham, Ala. 35202

Progressive Fish-Culturist  
U.S. Superintendent of Documents  
Washington, D.C. 20402

Rabbits in Canada  
Clay Publishing Co.  
1 Oak Street  
Bewdley, Ontario, Canada

Ranchman  
Henry L. King  
107 West Fourth Street  
Tulsa, Okla. 74103

Rangeman's Journal  
Society for Range Management  
2120 South Birch Avenue  
Denver, Colo. 80222

Rice Journal  
Rice Journal Enterprises  
Box 14260  
Washington, D.C. 20003

Seed World  
434 South Wabash Avenue  
Chicago, Ill. 60605

Sheep Breeder and Sheepman  
Livestock Services  
Box 796  
Columbia, Mo. 65201

Shepherd  
A.A. Lund Associates  
Sheffield, Mass. 01257

Soils & Fertilizers  
Commonwealth Agricultural Bureaux  
Farnham Royal, Slough, SL2 3BN,  
England

Soil Science  
Williams & Wilkins Co.  
428 East Preston Street  
Baltimore, Md. 21202

Soybean Digest  
American Soybean Association  
Hudson, Iowa 50463



Successful Farming  
Meredith Corp.  
1716 Locust Street  
Des Moines, Iowa 50336

Weed Abstracts  
Commonwealth Agricultural Bureaux  
Farnham Royal, Slough, SL2 3BN,  
England

Weed Science  
Weed Science Society of America  
311 Illinois Building  
113 North Neil Street  
Champaign, Ill. 61820

Wheat Abstracts  
Nebraska Agricultural Experiment  
Station  
Lincoln, Nebr. 68508

World Crops  
9 Botolph Alley  
London EC3R, England



## Appendix C

### LIST OF ORGANIZATIONS

Organizations: Associations, Societies, Institutes (Source: *ENCYCLOPEDIA OF ASSOCIATIONS*. 11th ed. Detroit: Gale Research Co., 1977.)

Agricultural Consulting Associates  
c/o Bob Garey\*  
Association Building  
Ninth and Minnesota  
Hastings, Nebr. 68501

Agricultural Engineering Society  
of Australia  
New Science Center  
191 Parkville  
Victoria 3052, Australia

Agriculture Council of America  
1625 Eye Street, N.W., Suite 1025  
Washington, D.C. 20006

American Agricultural Engineering  
Association  
500 Twelfth Street, S.W.  
Washington, D.C. 20250

American Agricultural Marketing  
Associates  
225 Touchy  
Park Ridge, Ill. 60068

American Association for the  
Advancement of Science  
1515 Massachusetts Avenue, N.W.  
Washington, D.C. 20005

American Association of Cereal  
Chemists  
3340 Pilot Knob Road  
St. Paul, Minn. 55121

American Association of Nurserymen  
230 Southern Building  
Fifteenth and H Streets, N.W.  
Washington, D.C. 20005

American Association of Peanut  
Research and Education  
c/o Dr. Donald H. Smith, Secretary-  
Treasurer\*  
P.O. Box 755  
Yoakum, Tex. 77995

American Bankers Association  
1120 Connecticut Avenue, N.W.  
Washington, D.C. 20036

---

\*The reader is advised that names of executive officers are subject to change.

## List of Organizations

---

American Beekeeping Federation  
Route 1 Box 68  
Cannon Falls, Minn. 50009

American Dairy Goat Association  
Spindale, N.C. 28160

American Egg Board  
205 Touchy Avenue  
Park Ridge, Ill. 60068

American Fish Farmers Federation  
P.O. Box 191  
Lonake, Ark. 72086

American Honey Institute  
P.O. Box 8  
Edgewater, Fla. 32032

American Horticultural Society  
Mt. Vernon, Va. 22121

American Mushroom Institute  
P.O. Box 373  
Kennett Square, Pa. 19348

American National Cattlemen's  
Association  
1001 Lincoln Street  
Denver, Colo. 80203

American Pomological Society  
103 Tyson Building  
University Park, Pa. 16802

American Poultry Association  
Cushing, Okla. 74023

American Rabbit Breeders Association  
2401 East Oakland Avenue  
Bloomington, Ill. 61701

American Sheep Producers Council  
200 Clayton Street  
Denver, Colo. 80206

American Society of Agronomy  
677 South Segoe Road  
Madison, Wis. 53711

American Society of Agricultural  
Engineers  
2950 Niles Road, Box 229  
St. Joseph, Mich. 49085

American Society of Civil Engineers  
345 East Forty-seventh Street  
New York, N.Y. 10017

American Society of Farm Managers  
and Rural Appraisers  
P.O. Box 6857  
Denver, Colo. 80222

American Society of Plant  
Physiology  
9650 Rockville Pike  
Bethesda, Md. 20014

American Soybean Association  
Hudson, Iowa 50643

Animal Health Association, U.S.  
See United States Animal Health  
Association

Association of Seed Certifying Agents  
c/o R.H. Garrison\*  
Clemson, S.C. 29631

Atlantic Council of the United States  
1616 H Street, N.W.  
Washington, D.C. 20006

Bee Research Association  
See International Bee Research  
Association

British Bee-Keeper's Association  
13 Orchard Road  
Littlebourne  
Canterbury, Kent, England

California Date Growers  
Association  
P.O. Drawer HHH  
Indio, Calif. 92201

Catfish Farmers of America  
Tower Building  
Little Rock, Ark. 72201

Central Association of Beekeepers  
Ilford, England

Commercial Rabbit Association  
c/o Cone Publications  
Crondall Cottage  
High Clere  
Newbury, Berks, England

Council of State Governments  
Iron Works Pike  
Lexington, Ky. 40511

Dairy Herd Improvement Association  
Building 263  
Agricultural Research Center  
Beltsville, Md. 20705

Date Growers' Institute  
Box 613  
Indio, Calif. 92201

Farm and Industrial Equipment  
Institute  
410 North Michigan Avenue  
Chicago, Ill. 60611

Farmers' Educational and Cooper-  
ative Union of America  
P.O. Box 39251  
Denver, Colo. 80239

Foundation for American Agricultural  
Program of the Farm Foundation  
Southern Building, Suite 424  
1425 H Street, N.W.  
Washington, D.C. 20005

Grain Sorghum Producers Association  
1708-A Fifteenth Street  
Lubbock, Tex. 79401

Institute for Agricultural Engineers  
London, England

International Bee Research  
Associations  
Hill House  
Gerrards Cross, Bucks SL9 0NR,  
England

International Federation of  
Beekeepers' Association  
Corso Vittorio Emanuele 101  
100186 Rome, Italy

International Rice Research Institute  
Manila, Philippines

The Mushroom Growers' Association  
of Great Britain and Northern  
Ireland

Agriculture House  
Knightsbridge, London, England

Mushroom Institute  
See American Mushroom Institute

National Agricultural Institute  
See Agriculture Council of  
America

National Association of  
Agricultural Agents  
Springfield, Mo.

National Association of Animal  
Breeders  
401 Bernadette Drive  
P.O. Box 1033  
Columbus, Mo. 65201

National Association of County  
Agricultural Agents  
Court House  
Valley City, N.Dak. 58072

National Council of Agricultural  
Employers  
337 Southern Building  
Fifteenth and H Streets, N.W.  
Washington, D.C. 20005

## List of Organizations

---

National Council of Commercial  
Plant Breeders  
1030 Fifteenth Street, N.W.,  
Suite 964  
Washington, D.C. 20005

National Institute of Animal  
Agriculture  
No longer active

National Maple Syrup Council  
c/o Lloyd Sipple\*  
Bainbridge, N.Y. 13733

National Peanut Council  
Honeywell Building  
7900 Westpark Drive, Suite 713  
McLean, Va. 22101

National Sheep Breeders Association  
Radlett, England

The Northern Nut Growers  
Association  
4518 Holston Hills Road  
Knoxville, Tenn. 37914

Philadelphia Society for Promoting  
Agriculture  
325 Walnut Street  
Philadelphia, Pa. 19106

Potash Institute  
1649 Tullie Circle, N.E.  
Atlanta, Ga. 30329

Potato Association of America  
c/o Hugh J. Murphy\*  
114 Deering Hall  
University of Maine  
Orono, Maine 04473

Poultry and Egg National Board  
See American Egg Board

Poultry Breeders of America  
521 East Sixty-third Street  
Kansas City, Mo. 64110

Saskatchewan Department of  
Agriculture  
Aviary Department  
Regina, Saskatchewan, Canada

Society for Range Management  
2120 South Birch Street  
Denver, Colo. 80222

Soil Conservation Society of  
America  
7515 Northeast Ankeny Road  
Ankeny, Iowa 50021

Soil Science Society of America  
677 South Segoe Road  
Madison, Wis. 53711

Southern Beekeepers Association  
of Queensland  
5 Sybil Street  
Toowoomba, Queensland, Australia

United Fresh Fruit & Vegetable  
Association  
1019 Nineteenth Street, N.W.  
Washington, D.C. 20036

United Nations Educational  
Scientific and Cultural Organ-  
ization, U.S. National Com-  
mission for the  
See U.S. National Commission for  
the United Nations Educational  
Scientific and Cultural Organ-  
ization

United States Animal Health  
Association  
Byrd Building, Suite 118  
1910 Byrd Avenue  
Richmond, Va. 23230

U.S. National Commission for the  
United Nations Educational  
Scientific and Cultural Organ-  
ization  
Department of State  
Washington, D.C. 20520

United States Trout Farmers  
Association  
P.O. Box 681  
Buhl, Idaho 83316

Victorian Apiarist's Association  
Box 313, Wangaratta  
Victoria 3677, Australia

Vinifera Wine Growers Association  
Box 172  
The Plains, Va. 22171

Weed Science Society of America  
311 Illinois Building  
113 North Neil Street  
Champaign, Ill. 61820

Wine Institute  
165 Post Street  
San Francisco, Calif. 94108





## INDEXES



## AUTHOR INDEX

This index is alphabetized letter by letter, and includes names of authors, translators, editors, and compilers. Authors of individual chapters in volumes, and authors of papers and reports cited in annotations are listed. Also included are organizations which have sponsored meetings whose proceedings are entered.

### A

Abbitt, Ben 3  
 Acker, Duane 153  
 Adams, John F. 217  
 Adams, Ramon F. 169  
 Aldrich, Samuel R. 82, 83  
 Alexander, John T. 89  
 Allard, R.W. 75  
 Allen, George H. 228  
 American Bankers Association. Agricultural and Rural Affairs Committee 10  
 American Pomological Society 128  
 Amoroso, E.C. 196, 198  
 Anderson, Arthur Laurence 153  
 Anderson, J.R. 17  
 Anderson, William 143  
 Andress, F.N. 158  
 Andrienas, Paul A. 102  
 Anthonio, Q.B.O. 18  
 Anthony, David John 181  
 Anthony, Joseph P., Jr. 123  
 Armstrong, W.D. 124, 125  
 Amon, Daniel I. 73  
 Arthur, Henry B. 197  
 Ashraf, Muhammad 201  
 Atkins, Fred C. 141  
 Attoe, O.J. 70  
 Axinn, George Harold 37

Ayers, Jim 227  
 Ayres, William A. 89

### B

Babb, E.M. 11  
 Bailey, J.W. 198, 204  
 Bailey, Liberty Hyde 33, 144  
 Baines, Roy 28  
 Baker, C.B. 20  
 Baker, H. 124, 129  
 Baker, James K. 177  
 Baker, Lyle A. 171  
 Baker, Ralph 191  
 Ballich, C.N. 85  
 Bardach, John E. 223  
 Barger, E.L. 27, 28  
 Barger, Gerald L. 108  
 Barker, R.W. 166  
 Barker, Will 98  
 Barnard, Christopher Stephen 16  
 Barner, Ralph H. 163  
 Barnes, A.C. 89  
 Barnes, Kenneth K. 29  
 Barnes, Robert E. 93  
 Barron, Norman 181, 204  
 Barry, Peter J. 20  
 Barsh, Raymond 128  
 Barton, Lela V. 106  
 Bawden, F.C. 77

Bay, Edwin 37  
 Beal, George M. 40  
 Bear, Firman E. 65  
 Beaumont, J.W.L. 144  
 Becker, Manning H. 12  
 Becker, Raymond B. 171  
 Bement, R.E. 93  
 Bender, Ralph L. 35  
 Beneke, Raymond R. 15, 16  
 Benson, V.W. 191  
 Bentley, Maxwell 137  
 Berger, Samuel R. 43  
 Besterman, Theodore 51  
 Beuscher, Jacob Henry 8  
 Biddle, George H. 191  
 Biester, H.E. 199  
 Bilderling, N. De 108  
 Billard, Jules B. 3  
 Bishop, Charles E. 26  
 Bishop, D. 100, 122, 135  
 Bishop, F.E. 29  
 Bishop, J.L., Jr. 100, 122, 135  
 Black, C.A. 65  
 Blair, Robert 159  
 Blake, Helen T. 102  
 Blanford, Charles J. 176  
 Blauch, Lloyd E. 37  
 Boatfield, Graham 17  
 Boatfield, Jeffrey M. 124  
 Bohlen, Joe M. 40  
 Booth, Ernest 131, 162  
 Bottle, R.T. 110  
 Botts, Ralph Rudolph 19  
 Boulding, Kenneth 49  
 Bowman, John C. 156  
 Box, Thadis M. 74  
 Boyd, J.S. 30  
 Boyko, Hugo 71  
 Bracken, Marilyn C. 53  
 Bradford, Lawrence A. 11  
 Brady, Nyle C. 3, 66, 69  
 Brake, J.R. 19  
 Brandow, George E. 49  
 Branson, Farrel A. 71  
 Breimyer, Harold F. 4  
 Brevik, Ted J. 177  
 Brickbauer, E.A. 79  
 Briggs, Fred N. 75  
 Briggs, Hilton Marshall 156

Bright, Karin Drudge 35  
 Brison, Fred R. 133  
 British Crop Protection Council 102  
 British Oil & Cake Mills. Poultry  
     Advisory Board 192, 197, 215  
 Bromley, Daniel W. 44  
 Brooklyn Botanic Garden 128  
 Brooks, Reid M. 145  
 Brown, E. Evan 225  
 Brown, Mary Ruth 35  
 Bruns, E.G. 201  
 Bryant, W.R. 13  
 Buck, Solon Justus 43  
 Buckman, Harry O. 66  
 Buddemeier, Wilbur D. 11  
 Bullard, Ervin T. 119  
 Bundy, Clarence E. 157, 165, 172,  
     192  
 Bundy, Dwaine 203  
 Burges, H.D. 98  
 Burton, G.W. 75  
 Burton, John 99  
 Buse, Reuben C. 44  
 Bush, E.A.R. 51  
 Butterworth, Martyn 74  
 Buxton, Boyd M. 171

## C

Caldwell, B.E. 87  
 Calnel, B.W. 199  
 Campbell, E.A. 173  
 Campbell, Robert S. 91  
 Caponio, Joseph F. 53  
 Card, Leslie E. 193  
 Cargill, B.F. 121  
 Carlson, A.C. 164  
 Carlson, R.F. 128  
 Carter, Walter 99  
 Cartwright, John M. 8  
 Casady, Robert B. 215  
 Casalis, Jacques 205  
 Case, Harold Clayton M. 11  
 Cassard, Daniel W. 158  
 Castle, Emery Neal 12  
 Chamber of Commerce of the United  
     States 4  
 Chang, P'ei 4  
 Chapin, Carl 124, 125

Chapman, Homer D. 124  
 Chapman, R.F. 99  
 Chapman, S.R. 224  
 Chase, Agnes 93  
 Chastain, Elijah Denton 12  
 Chavez, Cesar 43  
 Cheek, Emory 107  
 Childers, Norman Franklin 121, 125,  
 127, 129, 131  
 Christenburg, Gerald 203  
 Christensen, Clyde Martin 81  
 Christensen, Robert L. 201  
 Church, D.C. 158  
 Churchill, James E. 239  
 Clark, Andrew G. 38  
 Clark, Colin 9  
 Clark, G.B. 179  
 Clawson, Marion 5, 44  
 Cleaver, Thayer 220  
 Cobham, R.O. 19  
 Cochran, L.C. 129  
 Cochrane, Willard W. 44  
 Coey, W.E. 177, 178  
 Cohan, R. 218, 239  
 Cole, H.H. 153, 157, 169, 174,  
 178, 186, 194, 195, 197  
 Coletti, Anthony 171  
 Committee for Economic Development  
 50  
 Conte, R.B. 15  
 Cook, J.A. 127  
 Cook, R.L. 66, 137  
 Cook, Stanton A. 157  
 Cooke, G.W. 66  
 Cookley, Jerry 166  
 Cooper, M. McG. 185  
 Cornell University. New York State  
 College of Agriculture. Department  
 of Agricultural Economics 12  
 Costilow, R.N. 231  
 Cox, Sidney W.R. 27  
 Cram, J.S. 40  
 Crampton, Earle Wilcox 159  
 Crane, Eva 218, 234  
 Cresswell, Eric 203  
 Criddle, Wayne D. 29  
 Crosby, D.G. 103  
 Crow, J. Richard 166  
 Crowley, J.W. 201  
 Crown, H.G. 186

Culpin, Claude 27-28, 88, 102  
 Cumming, W.A. 130  
 Cunha, Tony J. 165  
 Cupps, P.T. 157, 194  
 Cuthbertson, David P. 159

## D

Dalton, Patrick J. 9  
 Danilevskii, A.S. 99  
 Darrow, George M. 125  
 Daum, Donald R. 30  
 Davidson, Hamish Reid 177  
 Davidson, R.E. 99, 122, 135, 137  
 Davies, D.B. 66  
 Davis, Elizabeth Gould 37  
 Davis, J.G. 205  
 Davis, John H. 197  
 Davis, R.L. 165  
 Deason, Hilary J. 98  
 DeBach, Paul 97, 100  
 De Bilderling, N. See Bilderling, N.  
 De  
 De Gues, J.G. See Gues, J.G. De  
 Demaree, Albert Lowther 40  
 Dent, John Berry 17  
 DeOng, E.R. 100, 122, 135  
 DeSaulles, Deays 193  
 Diekmahns, E.C. 94  
 Diggins, Ronald V. 157, 165, 172,  
 192  
 Dijkman, M.J. 80, 90  
 Doane Agricultural Service 17  
 Doggett, H. 85  
 Doliber, Earl L. 229  
 Donahue, Roy L. 5, 33, 67, 122  
 Donald, H.P. 157  
 Donaldson, Graham Francis 17  
 Douff, R.L. 104  
 Downey, W. David 22  
 Dregne, Harold D. 73  
 Duckham, Alec Narraway 5  
 DuFaur, Ralph 185  
 Dukes, Henry Hugh 153  
 Dunne, Howard E. 181  
 Dyer, Irwin A. 159, 166, 168  
 Dykstra, R.R. 162

## E

Eagle, D.J. 66

Eck, Paul 125  
 Eckert, J.E. 219  
 Eddowes, Maurice 81  
 Edgerley, W.F. 165  
 Edmunds, L.H. 85  
 Edwards, D.I. 107  
 Eisgruber, L.M. 11  
 Elam, C. Jim 166  
 Ellis, Carleton 137  
 Ennis, W.B., Jr. 102  
 Ensminger, M. Eugene 154, 166, 172,  
 178, 185, 193  
 Epps, J.M. 107  
 Erwin, Will 240  
 Esau, Katherine 100  
 Esmay, Merle L. 31, 154  
 Evans, Everett F. 5, 33  
 Evans, James F. 40  
 Everett, T.H. 145

## F

Faber, Frederic Lewis 193  
 Faist, Bernard E. 224  
 Faivre, Milton I. 215  
 Fallert, Richard F. 172  
 Feakin, Susan D. 103  
 Fellows, Floyd 231  
 Fellows, Myrtle 231  
 Ferguson, Elizabeth S. 50  
 Ffiske, Gerald 196  
 Filby, D.E. 27  
 Finston, J. David 218  
 Finney, David John 20  
 Finney, J.B. 66  
 Fishel, Walter L. 35  
 Flint, W.P. 101, 135  
 Fogle, H.W. 129  
 Foley, Richard C., Sr. 172  
 Folley, R.R.W. 122  
 Foreman, C.F. 174  
 Foster, A.B. 67  
 Fowler, Stewart H. 166  
 Fraser, Allan K. 33, 186  
 Frazier, N.W. 126  
 Free, John B. 218  
 Frey, H. Thomas 6  
 Frey, Kenneth J. 75  
 Frick, George E. 201  
 Fritz, James C. 198

Frolich, G. 100  
 Fusonie, Alan M. 51  
 Futrell, Gene A. 23

## G

Gallimore, William W. 194  
 Galloway, Joseph H. 162  
 Garcia-Moya, Edmerado 74  
 Gastineau, Robert L. 50  
 Gaudet, Jean Louis 225  
 Genders, Roy 141  
 George Washington University. Bio-  
 logical Sciences Communication  
 Project 107  
 German-African Society 100  
 Gerth van Wijk, H.L. 110  
 Gifford, Gerald F. 71  
 Gilbert, E.G. 124, 128  
 Gojmerac, W.L. 110  
 Goldberg, Ray A. 197  
 Goldman, William G. 74  
 Gomm, F.M. 91  
 Goodin, J.R. 74  
 Goodwin, John W. 166  
 Goren, Nurit 119  
 Gossling, W.F. 6  
 Gough, W. James 163  
 Grainger, Robert B. 166  
 Grant, Warren R. 84  
 Gray, James R. 12  
 Great Britain. Ministry of Agricul-  
 ture, Fisheries, and Food 30  
 Greater Des Moines Chamber of  
 Commerce. Agricultural Committee  
 5  
 Grist, D.H. 84  
 Grizzel, Roy A., Jr. 226  
 Grubb, Norman H. 129  
 Guenther, H.R. 91  
 Gues, J.G. De 69  
 Gulvin, Harold E. 29

## H

Hackett, E.I. 91  
 Hafez, E.S.E. 154-55, 157, 159  
 Hair, Jake A. 166  
 Hall, Carl W. 28, 29, 121  
 Hall, Isaac Fults 13

Hall, John B. 34  
 Hall, Stanley C. 103  
 Hallett, Graham 44  
 Halter, Albert N. 41  
 Hamilton, James 13  
 Hammach, Gloria M. 233  
 Hammett, K.R.W. 76  
 Hammonds, T.M. 20  
 Hanke, H.E. 186  
 Hanlin, R.T. 111  
 Hanna, S. 139  
 Hansen, V.E. 71  
 Hanson, C.H. 92  
 Harlan, Jack R. 92  
 Haroldsen, Edwin O. 45  
 Harris, Lorin E. 73, 159, 186  
 Harris, Marshall 14  
 Harrison, B.D. 88  
 Hartman, Hudson T. 76, 122  
 Hartwig, E.E. 88  
 Hathaway, Dale E. 44  
 Hawker, M.F.J. 119  
 Hawkes, George R. 89  
 Hayes, J.D. 78  
 Heady, Earl O. 21, 45  
 Heady, Harold F. 92  
 Heath, Maurice E. 93  
 Hecht, Reuben W. 155  
 Hedges, Irwin R. 50  
 Hedges, Trimble Raymond 13  
 Heinemann, W.W. 167  
 Heinicke, Don R. 129  
 Held, R. Burnell 5  
 Henderson, H.O. 175  
 Henderson, James Lloyd 176  
 Herbst, J.H. 13  
 Herriott, Catherine T.M. 94  
 Hervey, D.F. 93  
 Hesling, J.J. 138  
 Hewitt, George B. 101  
 Hickling, Charles Frederick 226  
 Hide, G.A. 88  
 Hide, J.C. 68  
 Higbee, Edward 6  
 Higgs, Roger 20  
 Hill, Elton Brainard 14  
 Hillel, Daniel 67, 68  
 Hills, R.C. 73  
 Hitchcock, A.S. 93  
 Hodges, Earl F. 160

Hofstad, M.S. 199  
 Holder, Shelby H.G. 84  
 Holloway, J.K. 97  
 Hoover, Norman K. 35  
 Hopkin, John A. 20  
 Hopkins, James T. 123  
 Hopkins, John A. 21  
 Horton-Smith, C. 196  
 Hoskin, Michael 17  
 Houck, James P. 49  
 Houthakker, Hendrick S. 45  
 Howard, W.T. 174  
 Huber, J.T. 174  
 Hudson, D.E. 88  
 Huet, Marcel 224  
 Huffaker, C.B. 97  
 Hughes, Cledwyn 130  
 Hughes, H.D. 79  
 Hull, R. 89  
 Humbert, Roger P. 90  
 Humboldt, Russell T. 89  
 Hume, A. 167  
 Hume, H. Harold 123  
 Hunt, J.L. 102  
 Hussey, Norman W. 98, 138  
 Hyams, Edward 126  
 Hyder, D.N. 93

I

Inglett, G.E. 83, 84  
 International Economics Association 46  
 International Maize and Wheat Improvement Center 108  
 Iowa State University. Center for Agricultural and Economic Development 5, 46  
 Iowa State University. College of Agriculture 14  
 Irvin, Ruth J. 193-94  
 Iseley, Duane 97  
 Israelson, O.W. 71  
 Iverson, E.S. 229

J

Jacobson, Martin 103  
 Jacobson, P. 29  
 James, Sydney C. 18, 21

Janick, Jules 79, 144  
 Jaynes, Richard A. 133  
 Jenkins, Theodore 104  
 Jennings, Joseph Brian 160  
 Jensen, A.H. 178  
 Jensen, E.H. 91  
 Jensen, Harold R. 41  
 Jodson, N.E. 85  
 Johansson, M.P. 219  
 Johansson, T.S.K. 219  
 Johnson, Bruce B. 9  
 Johnson, D. Gale 47  
 Johnson, F. Roy 86  
 Johnson, Geoffrey 178  
 Johnson, Glenn L. 11, 41  
 Johnson, Joe B. 179  
 Johnson, Leslie E. 156  
 Johnson, Paul E. 11  
 Johnson, Phillip N. 196  
 Johnson, T.H. 85  
 Johnson, William H. 83  
 Johnston, J. 99  
 Johnston, J.R. 74  
 Johnston, T.D. 78  
 Jones, C.M. 215  
 Jones, F.R. 28  
 Jordan, R.M. 186  
 Judkins, Henry Forest 173  
 Juergenson, Elwood M. 131, 158,  
 167, 173, 177, 187, 191, 240

## K

Kahn, Henry 224  
 Kains, M.G. 240  
 Kaufmann, H.H. 81  
 Kaysing, Bill 240  
 Keener, Harry A. 173  
 Keenley-Side, J.F. 119  
 Keil, H.L. 129  
 Kelley, Walter T. 219  
 Kelsey, Myron P. 19  
 Kemmerling, Diane 53  
 Kepner, R.A. 28  
 Kems, W.R. 3  
 Kester, D.E. 76, 122  
 Kilgore, W.W. 104  
 Kilmer, V.J. 69  
 King, Lawrence J. 97  
 Kingsbury, John M. 97

Kipps, Michael Smith 80, 93  
 Kiser, James J. 153  
 Kliewer, William 127  
 Klingbeil, A.L. 189  
 Knapp, Joseph Grant 24  
 Knoblauch, H.C. 38  
 Knott, J. Edward 135  
 Knowles, P.F. 75  
 Knuti, L.L. 68  
 Koger, Marvin 165  
 Kohls, Richard L. 22  
 Korpi, Milton 68  
 Koval, C.F. 110  
 Kramer, Nicholas M. 86  
 Krause, Kenneth R. 9  
 Krebs, Alfred H. 7  
 Kroehler, F. 100  
 Kyle, R.J. 108

## L

Ladd, George W. 23  
 Laidlaw, Harry Hyde 219  
 Lair, Eugenie 35  
 Lamb, Bob 231  
 Lamond, D.R. 173  
 Lamp, Benson J. 83  
 Lancot, Raymond 159  
 Landauer, Walter 194  
 Lane, Albert M. 168  
 Langer, Richard W. 240  
 Lanham, Uri 101  
 Lapwood, D.H. 88  
 Larson, W.E. 83  
 Lasley, John Foster 157  
 Lattig, Herbert E. 182  
 Laurie, Alexis 138  
 Laverton, Sylvia 72  
 Laycock, W.A. 93  
 Leach, S.S. 88  
 Leagans, J. Paul 34  
 LeClerg, Erwin L. 38  
 Lecomte, A. 95  
 Lee, Jasper S. 226  
 Lee, Warren F. 21  
 Legg, Gordon W. 33  
 Leigh, J.H. 187  
 Leng, Earl R. 82  
 Leonard, Warren H. 38, 80, 82, 88,  
 89, 90



Leopold, Aldo Carl 76  
 Lerner, I. Michael 157  
 Lewis, D. 181  
 Lewis, E. Fordham 181  
 Lider, L.A. 127  
 Liebscher, H. 100  
 Lins, David A. 9  
 Lionberger, H.F. 34  
 Little, Leslie 219  
 Lockhart, J.A.R. 80  
 Logsdon, Gene 241  
 Lomborg, Michael L. 171  
 Loomis, Charles P. 34  
 Loomis, Mildred 241  
 Loosli, John K. 160  
 Lorenz, F.W. 194  
 Lough, Harold W. 172  
 Lovegrove, H.T. 80  
 Luce, William J. 179  
 Luening, Robert A. 14, 220  
 Luscombe, John 179  
 Lush, Jay L. 158  
 Luthin, James N. 72  
 Lytle, R.J. 31

## M

McClellan, W.D. 102  
 McCollum, J.P. 136  
 McCormick, W.C. 175  
 McCoy, E.W. 226  
 McCoy, John Henry 164  
 McCoy, Vernon Lee 32  
 McCrone, Gavin 47  
 McCullough, Marshall E. 175  
 McGinnies, William G. 74  
 McGrath, Mary Jean 25  
 McGraw, E.L. 12  
 Mack, Jerry 227  
 Mack, Warren B. 138  
 McKell, Cyrus M. 74  
 Mackenzie, David 189  
 McLeamey, William O. 223  
 McMillen, Wheeler 34  
 McNeil, William J. 229  
 McVickar, Malcolm H. 69  
 Madsen, Howard C. 45  
 Majors, Kenneth R. 86  
 Manchester, Alden Coe 176  
 Maner, J.H. 179

Manitoba, University of. Faculty  
 of the Agricultural College 18  
 Manitoba, University of. Office of  
 the Dean of Agriculture 14  
 Mann, Ernest John 205  
 Mann, George Ernest 194  
 Maramorosch, Karl 77  
 Marriage, L. Dean 227  
 Marsh, Hadleigh 187  
 Martin, G.C. 186  
 Martin, Hubert 102  
 Martin, John H. 80, 82, 89, 90  
 Martin, W.P. 83  
 Martin, William E. 27  
 Mason, I.L. 205  
 Mates, A. 158  
 May, C.G. 204  
 Mayer, Leo V. 45  
 Maynard, Leonard A. 160  
 Mays, D.A. 94  
 Mendel, K. 119  
 Merchant, I.A. 163  
 Merck and Company 199  
 Merrill, Julia S. 220  
 Metcalf, C.L. 101, 135  
 Metcalfe, Darrel S. 79, 93  
 Meyer, Fred P. 235  
 Milk and Dairy Products Technical  
 Advisory Commission 174  
 Miller, John J. 171  
 Miller, William Christopher 163  
 Milne, P.H. 229  
 Miner, J. Ronald 203  
 Ministry of Agriculture, Fisheries,  
 and Food. See Great Britain.  
 Ministry of Agriculture, Fisheries,  
 and Food  
 Mircetich, S.M. 129  
 Mitchell, Roger L. 80  
 Mongelli, Robert C. 123  
 Moody, E.G. 174  
 Moore, Clarence A. 86  
 Moore, J.N. 144  
 Moore, John R. 23, 176, 195  
 Morgan, J.T. 181  
 Morgan, Robert J. 38  
 Morris, F. Ray 179  
 Morrison, Denton E. 43  
 Morrison, Frank B. 160  
 Morrison, Fred L. 9

Morrison, J.W. 130  
 Morse, Roger A. 220  
 Mortenson, Ernest 119  
 Mortenson, William Peter 14, 23, 79, 173  
 Morton, R.A. 198  
 Mowat, David N. 159  
 Muehling, Arthur J. 31, 182  
 Mulcady, L.F. 68  
 Murdock, L.W. 95  
 Murphy, Donald R. 41  
 Murray, William G. 10, 21  
 Muzik, T.J. 98  
 Myers, Victor I. 53

## N

Nalbandov, A.V. 195  
 National Commission on Food and Fiber 47  
 National Research Council 161  
 National Research Council. Agricultural Board 104  
 National Research Council. Committee on African Honey Bee 220  
 National Research Council. Committee on Agricultural Production Efficiency 48  
 National Research Council. Committee on Agriculture and the Environment 48  
 National Research Council. Committee on Animal Nutrition 161-62, 167, 175, 187, 197, 215, 225  
 National Research Council. Committee on Genetic Vulnerability of Major Crops 77  
 National Research Council. Committee on Nutrition of Domestic Animals 180  
 National Research Council. Committee on Physiological Effects of Environmental Factors on Animals 155  
 National Research Council. Committee on Remote Sensing in Agriculture and Forestry 38  
 Nelkin, Dorothy 26  
 Nelson, Aaron Gene 20, 21  
 Nelson, D.G. ("Bill") 86  
 Nelson, Donald M., Jr. 61  
 Nelson, W.L. 70

Nesheim, Malden C. 193  
 Netherway, Marjorie E.P. 216  
 Neumann, A.L. 167  
 Newbauer, Loren W. 31  
 Nieuwhop, M. 136  
 Nijdam, J. 145  
 Nix, James E. 16, 168  
 Nix, John Sidney 15  
 Nixon, John W. 26  
 Noble, J.C. 187  
 Noble, Mary 78  
 Nordby, Julius E. 182  
 Norman, A.G. 88  
 Norman, L. 15  
 Norris, J.R. 98  
 North, Mack O. 195  
 North, Oliver S. 220  
 Northen, H.T. 138  
 Northen, R.T. 138  
 Nunn, Charles 46

## O

Ochse, J.J. 80, 90  
 O'Connor, Robert 18  
 Oldfield, J.E. 240  
 Olmo, H.P. 145  
 Olsen, H.M. 25  
 O'Mary, C.C. 166, 168  
 Oppenheimer, Harold L. 168  
 Organic Gardening and Farming Magazine Staff 145  
 Organization for Economic Development 7  
 Otte, Robert C. 6  
 Owen, J. Robert 71  
 Owen, Nancy Lee 189  
 Owens, Charles P. 220

## P

Paarlberg, Don 5  
 Padfield, Harland 27  
 Page, B.G. 104  
 Painter, Reginald H. 76  
 Palunin, Nicholas 73  
 Pankiw, P. 217  
 Panquin, F.L. 217  
 Papavizas, George C. 89  
 Papi, Giuseppe Ugo 46  
 Parioi, Annett A. 61  
 Park, Robert Donovan 81, 156

Paylore, Patricia 74, 108  
 Peairs, L.M. 99, 122, 135, 137  
 Pearson, Lorentz C. 65  
 Pendleton, J.W. 88  
 Pequequat, C. 158  
 Perrin, Noel 232  
 Perry, Enos J. 156, 222  
 Perry, R.A. 73  
 Pesed, John T., Jr. 70  
 Phipps, Lloyd J. 31  
 Pierre, W.H. 83  
 Plakidas, A.G. 126  
 Plowden, Curshan Chicheley 111  
 Poehlman, J.M. 76  
 Pond, W.G. 158, 179  
 Popenoe, Wilson 122  
 Porter, A.R. 174  
 Potter, J.M.S. 131  
 Poulton, Charles E. 53  
 Preston, T.R. 168  
 Price, W.T. 179  
 Promersberger, W.J. 29  
 Putnam, Paul A. 168

## Q

Quebral, Nora 41  
 Quisenberry, K.S. 84

## R

Ray, Victor K. 7  
 Read, W.H. 138  
 Reaves, Paul M. 175  
 Reed, Clyde F. 98  
 Rees, Stephen William 180  
 Reische, Diana L. 48  
 Remmenga, E.E. 93  
 Resnick, Joe 43  
 Rice, Victor Arthur 158  
 Richey, C.B. 29  
 Richter, J.H. 50  
 Ricker, A. Chester 81  
 Ricker, Harold S. viii  
 Robbins, Putnam W. 232  
 Roberts, William C. 222  
 Robertson, Lynn S. 67  
 Robinson, D.H. 15  
 Robinson, David E. 241  
 Robinson, Kenneth L. 24

Rodewald, W. 100  
 Rojas-Mendoza, Paulino 74  
 Ronning, Magnar 153, 169, 174,  
 178, 186, 195, 197  
 Root, Amos Ives 221  
 Ross, L.W. 108  
 Ross, William M. 86  
 Rossmiller, G.E. 121  
 Rowe, Gene A. 59  
 Roy, Ewell Paul 7, 25, 195  
 Roy, Sujet Kumar 196  
 Rubatsky, V.E. 136  
 Rush, George E. 89  
 Russell, Kenneth Norton 174  
 Rust, J.M. 186  
 Rutger, J.N. 85  
 Ruttan, Vernon Wesley 49, 72  
 Ryder, E.J. 136  
 Ryther, John H. 223

## S

Sainsbury, David 182  
 Salcedo, Rodolfo N. 40  
 Sanders, H.C. 39  
 Sauchelli, Vincent 70  
 Sayce, R.B. 32  
 Schaars, Marvin A. 25  
 Schaible, Philip J. 198  
 Scheer, Arnold H. 131  
 Scheffer, Paul M. 227  
 Schlebecker, John T. 52  
 Schlinger, I. 100  
 Schmid, John W. 84  
 Schmitton, H.R. 228  
 Schnittker, John A. 47  
 Scholl, John C. 232  
 School, John L. 50  
 Schulz, Max Erich 205  
 Schwarte, L.H. 199  
 Schweitzer, Harvey J. 43  
 Scott, George E. 187  
 Scott, R.V. 39  
 Sedgewick, S. Drummond 228  
 Seiden, Rudolph 163  
 Selsam, Millicent E. 87  
 Semple, A.T. 94  
 Sendah, P.E. 231  
 Seymour, John 241  
 Seymour, Sally 241

Shalit, Michael 108  
 Sharples, Jerry 82  
 Shepherd, Geoffrey S. 23, 49  
 Shields, Joan 189  
 Shikluna, John C. 67  
 Shimanuki, Hachiro 221  
 Shoemaker, James Sheldon 127, 132  
 Shurtoff, Malcolm C. 120  
 Sidney, Howard 36  
 Siemer, Sidney R. 132  
 Simmons, Alan F. 123  
 Simms, D. Harper 39  
 Simons, Arthur J. 141  
 Simpson, Ian G. 18  
 Sims, John A. 156, 174  
 Singletary, Otis A. 36  
 Sipple, Lloyd H. 231  
 Smith, Carter R. 127  
 Smith, Francis Godfrey 221  
 Smith, Frederick J. 12  
 Smith, H. 144  
 Smith, H.P. 29  
 Smith, L.W. 161  
 Smith, Muriel W.G. 146  
 Smith, Ora 88  
 Smith, R.S. 169  
 Smith, Ray F. 109  
 Smith, Richard B. 180  
 Smith, W.L. 129  
 Snapp, Roscoe R. 167  
 Socolofsky, Homer E. 49  
 Somes, Ralph G. 205  
 Soule, M.J. 80, 90  
 Spedding, Colin Raymond William 94, 188  
 Spencer, Leland 176  
 Sprague, G.F. 75, 83  
 Srb, A.M. 75  
 Srivastava, Uma K. 45  
 Staflus, F.A. 110  
 Staneck, V.J. 101  
 Starbird, I.R. 22  
 Stephen, William A. 221-22  
 Stevens, Glenn Z. 36  
 Stevenson, F.J. 70  
 Stevenson, John Harold 222  
 Stevenson, W.A. 131, 162  
 Stiles, Warren C. 131  
 Stoddard, Charles H. 5  
 Stone, Archie A. 29

Stone, John Alfred 22  
 Stoneberg, Everett 21  
 Storey, David D. 36  
 Stoughton, R.H. 138  
 Street, Frank T. 131  
 Stricker, Thomas A. III 180  
 Strickler, Paul E. 29  
 Strong, William 19  
 Sturrock, Ford Gibson 22  
 Suter, Robert C. 10  
 Sutton, John G. 29  
 Swain, R.B. 102  
 Swan, L.A. 102  
 Swaney, Miller W. 137  
 Swartz, Delbert 111  
 Swartz, Sylvia G. 111  
 Swenson, Melvin J. 153  
 Sykes, Geoffrey 196

## T

Taylor, James A. 72  
 Taylor, Reed D. 232  
 Taylor, Richard 222  
 Taylor, Robert E. 169  
 Temmerman, H.J. 130  
 Templeton, George S. 216  
 Teskey, Benjamin J.E. 132  
 Theis, Thomas 89  
 Thomann, Werner 196  
 Thomas, D. Woods 41  
 Thomas, R.J. 185  
 Thompson, Jack C. 26  
 Thompson, Louis Milton 68  
 Thompson, W.C. 95  
 Thomson, W.T. 104  
 Thorat, Sudhakar 37  
 Thornton, Keith 180  
 Tiedjens, Victor Alphonse 241  
 Tisdale, S.L. 70  
 Titus, Harry W. 198  
 Tobin, Bernard F. 197  
 Tomek, William G. 24  
 Treherne, J.E. 144  
 Triandis, Harry C. 34  
 Troeh, Frederick R. 68  
 Trought, T.E.T. 102  
 Tsen, Cho C. 84  
 Tucker, Kenneth W. 222  
 Tukey, Harold Bradford 132

Turkel, Howard S. 137  
Tweeten, Luther G. 45, 49

## U

Ulberg, L.C. 155  
Ullstrup, A.J. 83  
Underwood, E.J. 162  
U.S. Department of Agriculture. Crop  
Reporting Board 232  
U.S. Federal Trade Commission 216  
University of Manitoba. See Manitoba,  
University of  
Upton, Martin 18  
Utley, P.B. 175

## V

Vail, P.V. 136  
Vaiz, Marvin A. 123  
Van Arsdall, Roy N. 180  
Van der Plank, J.E. 77  
Van Doran, C.E. 74  
Verdin, Richard 182  
Vermeer, James 22  
Villiard, Paul 216  
Vivian, John 242  
Vohra, Pran 197  
Voisin, Andre 94-95  
Voorhis, Jerry 25

## W

Wakeman, T.J. 32  
Waldo, Arley D. 49  
Walker, Harry B. 31  
Walker, J.C. 78  
Walker, Rodney L. 82  
Walker, Stanley E. 109  
Wall, Joseph S. 86  
Wallace, James J. 15  
Wallace, Louis D. 219  
Waloff, N. 99  
Walsh, Richard G. 23, 195  
Wang, Jen Yu 108  
Ware, George W. 136  
Wamer, W. Keith 43  
Warnick, Alvin C. 165  
Warwick, Everett J. 168  
Wasserman, Paul 53

Waters, William K. 30  
Webber, R. 120  
Weblburg, C. 80, 90  
Webster, J.P.G. 17  
Weigle, R.N. 174  
Weinberger, John H. 132  
Welch, Finis 35  
West, Geoffrey P. 163  
Westcott, Cynthia 111  
Western, J.H. 78, 88, 89  
Wheeler, B.E., Jr. 78  
Whitaker, Thomas W. 136  
White, Fred C. 3  
Wiegand, Karl M. 144  
Wigglesworth, V.B. 144  
Willet, G.S. 174  
Williams, Donald B. 39  
Williams, Stephen 95, 174  
Willis, M.B. 168  
Willits, C.O. 232  
Wills, Walter J. 82  
Wilson, Harold K. 81  
Wilson, W.O. 197  
Winburne, John 52  
Windels, Harvey 186  
Wing, James M. 175  
Winkler, A.J. 127  
Winterboer, Ronald D. 16  
Wiseman, A.J.L. 80  
Wittwer, S.H. 139  
Wolfe, Herbert S. 124  
Wolfenstine, Manfred R. 169  
Woodruff, J.G. 87  
Woodside, Arch G. 24  
Wright, R.C.M. 120  
Wyatt, C.E. 95  
Wyatt, H.V. 110  
Wyld, Robin 128  
Wynn, Peter 132

## Y

Yang, W.Y. 16  
Yeager, Joseph Henry 12, 227  
Young, R.J. 202  
Younts, S.E. 69  
Youtz, H.G. 164

## Z

Ziegler, Louis W. 124  
Zummo, Natal 85



## TITLE INDEX

This index is alphabetized letter by letter. It includes titles of books, journals, dissertations, reports, and proceedings. Some titles have been shortened.

### A

- |  |  |
|--|--|
| <p>ABC and XYZ of Bee Culture 221</p> <p>Abstracts of Entomology 143</p> <p>Accounting for Management in Agriculture 22</p> <p>Adaptation of Domestic Animals 154</p> <p>Adjustments in Agriculture 46</p> <p>Adoption of New Ideas and Practices 34</p> <p>Adult Education in Agriculture 35</p> <p>Advance of American Cooperative Enterprise, The 25</p> <p>Advances in Agronomy 109</p> <p>Advances in Corn Production 83</p> <p>Advances in Fruit Breeding 144</p> <p>Advances in Insect Physiology 144</p> <p>Advances in Sugarbeet Production; Principles and Practices 89</p> <p>African Honey Bee 220</p> <p>After a Hundred Years, The Yearbook of Agriculture 1962 36</p> <p>AGRICOLA 53</p> <p>Agricultural and Aquacultural Uses of Waste Heat 228</p> <p>Agricultural Bargaining Power 23</p> <p>Agricultural Education 36</p> <p>Agricultural Education in a Technical Society 35</p> <p>Agricultural Engineering 62</p> <p>Agricultural Engineering Australia 61</p> | <p>Agricultural Engineers' Handbook 29</p> <p>Agricultural Engineers' Yearbook 62</p> <p>Agricultural Extension 39</p> <p>Agricultural Finance 21</p> <p>Agricultural Financial Review 9, 56</p> <p>Agricultural, Forestry, and Oceanographic Technician 36</p> <p>Agricultural Index, 1922-56 108</p> <p>Agricultural Mathematics 20</p> <p>Agricultural Outlook 56</p> <p>Agricultural Policy in Affluent Society 49</p> <p>Agricultural Policy in Canada 48</p> <p>Agricultural Policy in the United Kingdom 48</p> <p>Agricultural Policy under Economic Development 45</p> <p>Agricultural Price Analysis 23</p> <p>Agricultural Prices 56</p> <p>Agricultural Production Efficiency 48</p> <p>Agricultural Product Prices 24</p> <p>Agricultural Projections for 1975 and 1980: Europe, North America, Japan, Oceania, Production and Consumption of Major Foodstuffs 7</p> <p>Agricultural Protection and Trade 50</p> <p>Agricultural Research 57</p> <p>Agricultural Science Review 112</p> <p>Agricultural Situation 57, 240</p> <p>Agricultural Statistics 57</p> |
|--|--|

- Agriculture; a Bibliographic Guide 51  
 Agriculture and Industrialization; The Adjustments That Take Place as an Agricultural Country is Industrialized 4  
 Agriculture and the Quality of the Environment 3  
 Agriculture in Our Lives 7  
 Agriculture USA 61  
 Agri-Fieldman and Consultant 110  
 Agronomy Abstracts 114  
 Agronomy Journal 114  
 Agronomy News 114  
 Alfalfa Science and Technology 92  
 Alternative Sources of Protein for Animal Production 161  
 Amateur Sugar Maker 232  
 American Agricultural Press, The 40  
 American Bee Journal 220, 222, 233  
 American Beekeeping Federation Newsletter 234  
 American Fruit Grower 124, 146  
 American Fruit Growers' Directory 146  
 American Journal of Agricultural Economics 36  
 American Potato Journal 114  
 American Potato Yearbook 109  
 American Universities and Colleges 36  
 American Vegetable Grower 146  
 American Vegetable Growers' Directory 146  
 Analysis of Beekeeping Production Costs and Returns, An 220  
 Animal Agriculture 153, 169, 174, 178, 186, 195, 197  
 Animal Breeding Abstracts 203  
 Animal Breeding Plans 158  
 Animal Growth and Nutrition 159  
 Animal Husbandry 156  
 Animal Nutrition 160  
 Animal Sanitation and Disease Control 162  
 Animal Science 154  
 Animal Science and Industry 153  
 Animals in the American Economy 156  
 Annotated Bibliography of Nematodes of Soybeans, 1969-73 107  
 Annual Review of Entomology 109  
 Aphanomyces Species and Their Root Diseases in Pea and Sugarbeet 89  
 APIACTA 235  
 Apicultural Abstracts 234  
 Apicultural Literature 219  
 Apples 132  
 Applied Animal Nutrition 159  
 Applied Economics 44  
 Appraisal of Farm Real Estate, The 10  
 Approved Practices in Beef Cattle Production 167  
 Approved Practices in Crop Production 79  
 Approved Practices in Dairying 173  
 Approved Practices in Farm Management 13  
 Approved Practices in Feeds and Feeding 158  
 Approved Practices in Fruit Production 131  
 Approved Practices in Poultry Production 191  
 Approved Practices in Sheep Production 187  
 Approved Practices in Soil Conservation 67  
 Approved Practices in Swine Production 177  
 Apricots, Peaches, Nectarines, Figs, and Grapes 124  
 Aquaculture 223  
 Arid Lands in Transition 73  
 Arid Lands Research Institutions 108  
 Arthur Capper; Publisher, Politician and Philanthropist 49  
 Artificial Insemination of Farm Animals, The 156, 222  
 ASAE Transactions 62  
 ASCE Publications Abstracts 114  
 ASCE Transactions 114  
 Atlas of Nutritional Data 161  
 Australian Bee Journal 235  
 Available Publications of U.S. Department of Agriculture's Agricultural Marketing Service 57

## B

Background Washington 61



- Balance Sheet of the Farming Sector, The 58
- Barns, Buildings and Construction Details for Dairy Goats 189
- Base Plans in U.S. Dairy Markets 172
- Basic Animal Nutrition and Feeding 158
- Bee and Honey Patents of the World 220
- Bee Book for Beginners, A 219
- Bee-Craft 234
- Beef 206
- Beef Cattle 167
- Beef Cattle Science 166
- Beef Finishing 167
- Beef Production 165
- Beef Production in the South 166
- Beekeeping: A Correspondence Course 221
- Beekeeping Advanced Short Course 217
- Beekeeping and the Law 218
- Beekeeping Correspondence Course Sixteen 222
- Beekeeping for Beginners 217
- Beekeeping Records 220
- Beekeeping, the Gentle Craft 217
- Bees and Beekeeping 220
- Bee World 234
- Behavioral Change in Agriculture 34
- Behavior of Domestic Animals, The 155
- Beneficial Insects 102
- Bibliography of Agricultural Meteorology 108
- Bibliography of Agriculture, 1943-56 108
- Bibliography of Aquaculture 233
- Bibliography of Books and Pamphlets on the History of Agriculture 52
- Bibliography of Corn 108
- Bibliography of Livestock Waste Management 203-4
- Bibliography of Peanuts 108
- Bibliography of Seeds 106
- Bibliography of Soil Science, Fertilizers and General Agronomy 107
- Bibliography of Wheat 108
- Bibliography on the Technology of Peanut Production 1957-1961 108
- Big Farmer 54
- Biological and Agricultural Index 53
- Biological Control of Insects, Pests, and Weeds 97, 100
- Blueberry Culture 125
- Bovine Health Program 171
- Breeding and Improvement of Farm Animals 158
- Breeding Field Crops 76
- British Bee Journal 233
- British Fruit Farming 122
- British Poultry Standards 204
- Broiler Hatchery 210
- Broiler Industry 206
- C
- California Catfish Congress 224
- Canadian Bee Journal 233
- Can Modern Dairy Farms Compete for Hired Labor? 171
- Catfish Farming Handbook 227
- Catfish Marketing and Related Production Factors 226
- Cattle on Feed 208
- Celery 148
- Century of Service 37
- Cereal Crops 82
- Changes in Farm Production and Efficiency 58
- Changing Structure in U.S. Agribusiness and its Contribution to the National Economy, The 4
- Chemical Fruit Thinning of Peach and Apple 129
- Cherries (Crop Release) 147
- Cherries (Grubb) 129
- Cherry Utilization 147
- Chicken-Broiler Industry: Structure, Practices, and Costs, The 193
- Chickens, Eggs & Broilers 210
- Citrus Fruits (Crop Release) 147
- Citrus Fruits (Hume) 123
- Citrus Growing in Florida 124
- Citrus Industry Magazine 147
- City Man's Guide to the Farm Problem, The 44

- Cole Crops 136
  - Collective Bargaining in Agriculture 25
  - Collegiate Dictionary of Botany 111
  - Commercial Apples by Varieties 147
  - Commercial Beef Cattle Production 168
  - Commercial Broilers 210
  - Commercial Catfish Farming 226
  - Commercial Chicken Production Manual 195
  - Commercial Fish Farmer and Aquaculture News 233
  - Commercial Fish Farming Conference 225
  - Commercial Rabbit 215, 233
  - Commercial Rabbit Raising 215
  - Commercial Uses of Waste as Animal Feed 158
  - Commodity Futures Market, The 20
  - Commodity Prices 53
  - Communication in Agriculture 40
  - Complete Forage Plan for Wisconsin Beef Cattle, A 165
  - Complete Homesteading Book, The 241
  - Concept of Agribusiness, A 197
  - Conference on Agricultural and Processing Wastes, A 202
  - Conference on Maple Products 231
  - Consumption of Feed by Livestock 160
  - Contract Farming USA 7
  - Control of Soil Fertility, The 66
  - Control of Summer Ticks in Beef Cattle 166
  - Cooperative Extension Service, The 39
  - Cooperatives 25
  - Cooperatives Today and Tomorrow 25
  - Corn 83
  - Corn Diseases 83
  - Corn Production 83
  - Corporate Farming and the Family Farm 5
  - Corporate Invasion of American Agriculture, The 7
  - Countryside 234
  - County Agent & Vo-Ag Teacher 110
  - County Agents Directory 52
  - Cowboy Arithmetic; Cattle as an Investment 168
  - Cranberries 147
  - Cranberries, the National Cranberry Magazine 147
  - Crop Growth and Culture 80
  - Crop Husbandry 81
  - Cropland for Today and Tomorrow 6
  - Crop Production (Crop Release) 112
  - Crop Production (Hughes) 79
  - Crop Production Equipment 80
  - Crop Production in Dry Regions 73
  - Crops & Soils Management 114
  - Crop Values 112
  - Crossbreeding Beef Cattle 165
  - Current Advances in Plant Science 144
  - Current and Future Developments in Pollination and Research 218
  - Current Contents 54
- ## D
- Dairy Cattle 172
  - Dairy Cattle Breeds 171
  - Dairy Cattle Feeding and Management 175
  - Dairy Cattle Husbandry 173
  - Dairy Cattle in American Agriculture 174
  - Dairy Cattle Management 175
  - Dairy Cattle Science 172
  - Dairy Dictionary 205
  - Dairy Farmer's Veterinary Book, The 204
  - Dairy Floors 174
  - Dairy Goat Journal, The 189, 206
  - Dairy Market Statistics 209
  - Dairy Production 172
  - Dairy Science Abstracts 203
  - Dairy Situation 209
  - Dairy Statistics 1960-67 209
  - Dairy Statistics Through 1960 209
  - Demand & Price Situation 56. See also Agricultural Outlook
  - Desert Locust Project 99
  - Deserts of the World 74
  - Design and Operation of Earthen Raceways for Channel Catfish Production 224

Destructive and Useful Insects 101, 135  
 Developments in the Culture of Channel Catfish in Cages Suspended in [Earthen] Ponds: A Report 228  
 DHIA Cow Performance Index 207  
 DHIA Sire Summary List 207  
 Dictionary of Agricultural and Allied Terminology, A 52  
 Dictionary of Plant Names, A 110  
 Directory and Guide to Who's Who in Horticulture and Gardening 145  
 Directory of Agricultural Research Service 58  
 Directory of American Horticulture 148  
 Diseases of Crop Plants 78, 89  
 Diseases of Poultry 199  
 Diseases of Swine 181  
 Diseases of the Pig 181  
 Doane's Farm Management Guide 17  
 Dollar Harvest 43  
 Domestic Rabbit Production 216  
 Double Cropping Land for Silage Production 95  
 Drainage Engineering 72  
 Drainage of Agriculture Land 71  
 Duke's Physiology of Domestic Animals 153  
 Dwarfed Fruit Trees for Orchard, Garden, and Home 132  
 Dynamics of Adjustment in the Broiler Industry 197

## E

Ecological Response of Native Plants 93  
 Econometric Models of Cost and Futures Prices of Shell Eggs 196  
 Economic Demand for Irrigated Acreage 72  
 Economic History of Milk Marketing and Pricing, An 176  
 Economic Impact of Controlling Water Runoff from Point Sources in U.S. Hog Production 180

Economic Policy for the Farm Sector 45  
 Economic Problems of Agriculture in Industrial Societies 46  
 Economics of Agricultural Policy, The 44  
 Economics of Beekeeping 221  
 Economics of Subsidising Agriculture, The 47  
 Effect of Processing on the Nutritional Value of Feeds 161  
 Effects of Changes in Vertical Coordination in Pork Production and Prices 178  
 Egg Grading Manual 193  
 Egg Industry 206  
 Egg Products 210  
 Eggs, Chickens, and Turkeys 210  
 Elsevier's Dictionary of Horticulture 145  
 Encyclopedia of Animal Care 163  
 Encyclopedia of Organic Gardening, The 145  
 Evaluation of Systems for Harvesting Grapefruit in Texas, An 123  
 Experiment Station Record, 1896-1946 108  
 Exploring Agriculture 5, 33  
 Ex-Urbanite's Complete and Illustrated Easy-Does-It-First-Time Farmer's Guide, The 240

## F

Factors Affecting Fruit Condition 131  
 Factors Affecting the Growth and Production of Channel Catfish in Raceways 224  
 Factors Producing Embryonic and Fetal Abnormalities, Death, and Abortion in Swine, Symposium On 182  
 Familiar Insects of America 98  
 Family Farm-Operating Agreements 14  
 Family-Farm Records 22  
 Farm Accounting and Business Analysis 21  
 Farm Accounting and Management 22  
 Farm and Garden Equipment Guide 144  
 Farm and Personal Finance 19

- Farm and Ranch Real Estate Law 8
- Farm Animal Health and Disease Control 162
- Farm Animals 154
- Farm Appraisal and Valuation 10
- Farm Beef Herd, The 168
- Farm Builders Handbook 31
- Farm Building Design 31
- Farm Buildings 32
- Farm Buildings Pocketbook 30
- Farm Business, The 15
- Farm Business Management 12
- Farm Business Management; the Decision-Making Process 12
- Farm Chemicals Handbook 109
- Farm Commodity Programs 47
- Farm Equipment Red Book 54
- Farmer, The 55
- Farmer and the Lender, The 19
- Farmers' Expenditures for Custom Pesticide Service 1971 104
- Farmers' Handbook of Financial and Physical Measurements 19
- Farmers in Business 24
- Farmers in the Market Economy 46
- Farmer's Organizations and Movements 43
- Farmers' Use of Pesticides in 1971 . . . Expenditures 102
- Farmers' Use of Pesticides in 1971; Extent of Crop Use 103
- Farmers, Workers and Machinery 27
- Farmer's World; The Yearbook of Agriculture. 1964. 50, 102, 103, 232
- Farm Gas Engines and Tractors 28
- Farm Goals in Conflict 5
- Farm Index, The 216
- Farming as a Business 18
- Farming for Self-Sufficiency 241
- Farming of Fish, The 226
- Farming Programs for Small Acreages 240
- Farming Systems of the World 5
- Farming the Edge of the Sea 229
- Farm Journal 41, 55
- Farm Journal and American Agriculture, 1877-1965 41
- Farm Labor in the United States 26
- Farm Machinery 27
- Farm Machinery and Equipment 29
- Farm Machinery Management Guide 30
- Farm Management Analysis 11
- Farm Management by Banks 10
- Farm Management Decisions 13
- Farm Management Handbook (Cornell University) 12
- Farm Management Handbook (Mortenson) 14
- Farm Management Pocketbook 15
- Farm Management Principles 13
- Farm Money Management 19
- Farm-Operator Family Living Expenditures 58
- Farm Pests 102
- Farm Planning 17
- Farm Planning and Control 16
- Farm Planning; Using the Appropriate Method of Linear Programming 17
- Farm Policy 49
- Farm Production and Efficiency 155
- Farm Production Expenditures 58
- Farm Real Estate Market Developments 58
- Farm Records and Accounting 21
- Farms and Farmers in an Urban Age 6
- Farm Shop, The 32
- Farm Technology 110
- Federal Cooperation in Agricultural Extension Work 37
- Federal Register 60
- Federal-State Market News Reports 59
- Feeding Cottonseed Meal and a Mixture Containing Buiret as Supplements for Wintering Beef Cows and Heifers 175
- Feeding, Digestion and Assimilation in Animals 160
- Feedlot, The 166
- Feedlot and Range Management 165
- Feedlot Management 206
- Feed Management 206
- Feed Production Handbook 159
- Feeds and Feeding 160
- Fertilizer Abstracts 105
- Fertilizer Guide for Tropical and Subtropical Farmers 69
- Fertilizer Nitrogen, its Chemistry and Technology 70
- Fertilizer Situation 113
- Fertilizer Technology and Use 69

Field Crop Abstracts 105  
 Field Plot Technique 38  
 Field Seed Stocks 113  
 Fifty Years of Citrus; the Florida Citrus Exchange, 1909-1959 123  
 Financial Management in Agriculture 20  
 Fish and Shellfish Farming in Coastal Waters 229  
 Fish Culture 226  
 Fish Farming a Commercial Reality 225  
 Fish Farming Conference: The Catfish Farmers of America: Proceedings 224  
 Fish Farming International 234  
 Fish Feed Technology and Nutrition Workshop 225  
 Five Acres and Independence 240  
 Fluid Milk Industry, The 176  
 Food for America's Future 6  
 Food Goals 46  
 Food Needs and U.S. Agriculture in 1980 47  
 Forage Fertilization 94  
 Forages: The Science of Grassland Agriculture 93  
 Forage Species for the Intermountain Region 91  
 Foreign Agricultural Trade in the United States '59, 93  
 Foundations of Farm Policy 49  
 Frean's Elements of Agriculture 15  
 Frequency and Practicability of Different Types of Paraformaldehyde Pellets for Controlling Microbial Growth in Maple Tree Tapholes 231  
 Fruit and Vegetable Harvest Mechanization Technological Applications 121  
 Fruit Situation 147  
 Fruit Tree Growing 128  
 Fruit Varieties and Horticultural Digest 149  
 Fruit Varieties Journal 149  
 Future Farm Programs; Comparative Costs and Consequences 45

## G

Gallus Domesticus Registry of Genetic Stocks 205  
 General Viticulture 127  
 Genetics of Livestock Improvement 157  
 Genetic Vulnerability of Major Crops 77  
 Georgia Agricultural Research 3  
 Gleanings in Bee Culture 234  
 Glossary of Terms Used in Federal-State Market News Reports 59  
 Goat Husbandry 189  
 Governing Soil Conservation 38  
 Government and Agriculture 44  
 Grain Bulletin 112  
 Grain Sorghum Research and Utilization 86  
 Grain Storage 81  
 Granger Movement; a Study of Agricultural Organization and its Political, Economic, and Social Manifestations, the 43  
 Grasses and Legumes in British Agriculture 94  
 Grassland Improvement 94  
 Grass Productivity 95  
 Grass Tetany 94  
 Green Book 55  
 Greenhouse Gardening 138  
 Greenhouse Tomatoes 139  
 Greenhouse Worker, The 138  
 Growing Grapes in Kentucky 124  
 Growing Nectarines 132  
 Growing of Sugar Cane, The 90  
 Growing Peanuts in Georgia 86  
 Growing Unusual Fruit 123  
 Grow It: The Beginner's Complete In-Harmony-With-Nature Small Farm Guide; From Vegetable and Grain Growing to Livestock Care 240  
 Guidelines for Analyzing the Dairy Farm Business 174  
 Guidelines for Cooperatives 25  
 Guide to Environmental Research on Animals 155  
 Guide to Mushroom Growing 141

Guide to the Literature of the Sugar Industry 108

## H

Handbook for Dairymen 171

Handbook for Vegetable Growers 135

Handbook of Agricultural Occupations 35

Handbook of North American Nut Trees 133

Handbook of Official Hay and Straw Standards 92

Handbook of Plant Propagation, A 120

Handbook of Tropical and Subtropical Horticulture 119

Handbook on Fruit Trees and Shrubs 128

Hatchability of Chicken Eggs as Influenced by Environment and Heredity, The 194

Hatchery Production 210

Hen Battery Management 192

Herbage Abstracts 105

Herbicide Handbook of the Weed Society of America 103

Heritage of American Agriculture 51

High Density Apple Orchards--Planning, Training, Pruning 129

Hired Farm Working Force 59

History of the National Association of Agricultural Agents 37

Hive and the Honey Bee, The 218

Hoard's Dairyman 206

Hog Farm Management 206

Hog Inventory and Pig Crops 209

Hogs and Pigs 209

Homesteader's Handbook, The 239

Homesteading 241

Honey 235

Honey; A Comprehensive Survey 218

Horticultural Abstracts 143

Horticultural Machinery 119

How Good Is Your Land? A Handbook of Land Evaluation 68

How-To Book on Strawberries, The 128

How to Control Plant Disease 120

How to Hang Plastic Tubing to Collect Maple Sap 231

How to Keep Bees and Sell Honey 219

How to Make it on the Land 239

How to Raise Rabbits for Fun and Profit 215

Hydroponics Plus: The Bentley System; A New Approach to Intensified Farming 137

## I

Identification and Control of Honey Bee Diseases 221

Impact of Dairy Imports on the United States Dairy Industry 173

Impact on Dairy Farm Organization of Alternative Manure Disposal Systems, The 201

Index of Plant Diseases in the United States 110

Individual Freedom and the Economic Organization of Agriculture 4

Insect, Disease and Weed Control 100, 122, 135

Insect Guide, The 102

Insecticide Dictionary 110

Insecticides and Beekeeping in England 222

Insecticides and Fungicides 102

Insecticides from Plants 103

Insect Resistance in Crop Plants 76

Insects, The 101

Insects, Pests of Farm, Garden and Orchard 99, 122, 135, 137

Insects: Structure and Function, The 99

Insects in Relation to Plant Disease 99

Instrumentation in Agriculture 27

Insulating Poultry Buildings 192

Integrating Egg Production and Marketing 191

Intensive Beef Production 168

International Apicultural Congress 218

International Bibliography of Rice Research 107

International Citrus Symposium 124



- International Congress of Farm Writers (First): Proceedings 40
- International Horticultural Congress: Proceedings 119
- International Symposium on Increasing Food Production in Arid Lands: Proceedings 74
- Interregional Competition in the Broiler Industry 191
- Interregional Structure of the American Beef Industry in 1975 and 1980, The 166
- Introduction to Animal Breeding, An 156
- Introduction to Crop Husbandry 80
- Introduction to Grain Marketing, An 82
- Introduction to Plant Breeding 75
- Introduction to Plant Diseases, An 78
- Introduction to Statistical Science in Agriculture, An 20
- Introductory Animal Science 153
- Irrigation: Its Profitable Use for Agricultural and Horticultural Crops 72
- Irrigation Age 112
- Irrigation and Drainage Abstracts 105
- Irrigation Principles and Practices 71
- J**
- Job Safety and Health 59
- Journal of Apicultural Research 234
- Journal of Range Management 115
- Journal of Soil and Water Conservation 115
- Journal of the Irrigation and Drainage Division, ASA 114
- Joys of Beekeeping, The 222
- Judging Livestock, Dairy Cattle, Poultry and Crops 164
- L**
- Labor Used to Produce Livestock 155
- Land for the Future 5
- Land Law 9
- Land of Plenty 34
- Law and the Farmer 8
- Layers and Egg Production 210
- Lettuce Production in the United States 136
- Linear Programming Applications to Agriculture 16
- Liquid Supplements for Livestock Feeding 160
- List of National Fish Hatcheries 226
- List of Theses and Dissertations on Peanuts and Peanut-Related Research 107
- Livestock: A Successful Farming Book 155
- Livestock and Feed Relationships 208
- Livestock and Meat Marketing 164
- Livestock and Meat Situation 208
- Livestock and Meat Statistics 208
- Livestock and Poultry 157
- Livestock and Poultry Inventory 210
- Livestock Health Encyclopedia 163
- Livestock Market Digest 206
- Livestock Markets News Reports 208
- Livestock Slaughter and Meat Production 208
- Livestock Trucking Services: Quality, Adequacy, and Shipment Patterns 163
- Lobstering Inshore and Off 229
- M**
- Machines for Power Farming 29
- Major Statistical Series of the U.S. Department of Agriculture--How They Are Constructed and Used 60
- Making An Orchard 130
- Management Games for Teaching and Research 11
- Managing the Sow and the Litter 179
- Managing the Tenant-Operated Farm 15
- Manual for Rabbit Farming, A 216
- Manual of Brands and Marks, The 169
- Manual of Grasses in the United States 93
- Manual of Plant Names, A 111
- Manual of Practical Homesteading, The 242
- Manual of Remote Sensing 52

Manual of Tropical and Subtropical Fruits, Excluding the Banana, Coconut, Pineapple, Citrus Fruit, Olive and Fig 122

Maple Products 232

Maple Sugaring: The Way To Do It, A Family Album by Myrtle Fellows with Further Comment by Floyd Fellows 231

Maple Syrup Producers Manual 232

Marine Aquiculture; Selected Papers 229

Market Gardening 120

Marketing Agricultural Products 22

Marketing & Transportation Situation. See Agricultural Outlook

Marketing Farm Products 23

Market Structure of the Agricultural Industries 23, 176, 195

Marquette Business Review 24

Meadow Improvement 91

Mechanics in Agriculture 31

Merck Poultry Serviceman's Manual, The 199

Methods of Farm Management Investigations 16

Microbial Control of Insects and Mites 98

Microbiology Abstracts 106

Midwest Farm Handbook 14

Midwest Farm Planning Manual 18

Milk Production 209

Milk Production and Processing 173

Millet; A Bibliography of the World Literature Covering the Years 1930-1963, The 107

Mineral Nutrition of Livestock, The 162

Modern Beekeeping 219

Modern Breeds of Livestock 156

Modern Corn Production 82

Modern Dairy Goat, The 189

Modern Developments in Animal Breeding 157

Modern Farm Power 29

Modern Fruit Science; Orchard and Small Fruit Culture 121

Modernizing World Agriculture 37

Modern Marketing of Farm Products 23

More Profit From Pigs 177

Mushroom Growing 141

Mushroom Growing for Everyone 141

Mushroom Journal 149

Mushrooms 148

## N

National Agricultural Library Catalog 54

National Apple Register of the United Kingdom 146

National Engineering Handbook 71

National Geographic Magazine 3

National Maple Syrup Digest 235

National Peach Conference 130

National Poultry and Turkey Improvement Plan, The 211

National Rabbitman's Magazine, The 234

National Symposium on Animal Waste Management 201

Natural Flow Maple Sap, Plastic Tube Gathering System 231

Naturally Occurring Insecticides 103

Nature and Properties of Soils, The 66

New Farm Crop, A 226

New Illustrated Encyclopedia of Gardening 145

Newsom's Sheep Diseases 187

New Trade Policy for the United States, A 50

1973 Insecticide, Herbicide, Fungicide Quick Guide, The

1972 Peach Variety Performance 131

Noncitrus Fruits & Nuts 147

Noncitrus Fruits & Nuts, Mid-Year Supplement 147

North American Apples 128

Nursery Business 147

Nutrient Requirements of Beef Cattle 167

Nutrient Requirements of Dairy Cattle 175

Nutrient Requirements of Poultry 197

Nutrient Requirements of Rabbits 215

Nutrient Requirements of Sheep 187

Nutrient Requirements of Swine 180

Nutrient Requirements of Trout, Salmon, and Catfish 225



- Nutrient Solution Culture of Vegetable and Flower 138  
 Nutrition Abstracts and Reviews 203  
 Nutrition of Animals of Agricultural Importance 159  
 Nutrition of Pigs and Poultry 181
- O**
- Official Guide: Tractors and Farm Equipment 55  
 Official Journal of Plant Variety Protection Office 113  
 Olena Farm, U.S.A., An Agricultural Success Story 241  
 Onion Stocks 148  
 On the Season: Aspects of the Migrant Labor System 26  
 Operating Procedure for Simulation Farm Planning, An 17  
 Optimizing the Soil Physical Environment Toward Greater Crop Yields 68  
 Optimum Feeding of Dairy Animals for Meat and Milk 175  
 Organization and Competition in the Poultry and Egg Industries 195  
 Our Soils and Their Management; Increasing Production Through Soil and Water Conservation 67, 122  
 Outline of Infectious Diseases of Domestic Animals, An 163  
 Outlook for U.S. Agricultural Exports 61  
 Oxford Book of Insects, The 99
- P**
- Paper, The 3  
 Parasites and Diseases of Warmwater Fishes 227  
 Participants in the National Poultry Improvement Plan 195  
 Peach Production 129  
 Peanut 87  
 Peanut Journal and Nut World 112  
 Peanut News 114  
 Peanut Research 114  
 Peanuts 87  
 Peanuts--Culture and Uses 87  
 Peanut Story, The 86  
 Pecan Culture 133  
 Pest Control 112  
 Pest Control: Biological, Physical and Selected Chemical Methods 104  
 Pest Control in Groundnuts 103  
 Pesticide Label Book 109  
 Pests and Diseases of Tropical Crops and Their Control 100  
 Pests of Protected Cultivation, The 138  
 Phosphates in Agriculture 70  
 Photoperiodism and Seasonal Development of Insects 99  
 Pictorial Encyclopedia of Insects, The 101  
 Pictorial Poultry-keeping 193  
 Pig Farmer's Veterinarian Book, The 181  
 Pig Farming for Profit 180  
 Pig Housing 182  
 Pig Husbandry 179  
 Pig, Modern Husbandry and Marketing, The 179  
 Planning Profitable Farming Systems 18  
 Plant Breeding 75  
 Plant Disease Handbook 111  
 Plant Disease Reporter 113  
 Plant Growth and Development 76  
 Plant Pathology 78  
 Plant Physiology 114  
 Plant Propagation 76  
 Plant Propagation; Principles and Practices 76, 122  
 Plant Science 79  
 Plants for Sheep in Australia 187  
 Plants, Viruses, and Insects 100  
 Plant Viruses 77  
 Plant Viruses and Virus Diseases 77  
 Poisonous Plants of the United States and Canada 97  
 Policy Directions for U.S. Agriculture 44  
 Policy Formulation for Agricultural Cooperatives 26  
 Potatoes 88  
 Poultry 196  
 Poultry and Egg Situation 211  
 Poultry and Egg Statistics 211  
 Poultry Breeding 194  
 Poultry Feeds 197

- Poultry Feeds and Nutrition 198
  - Poultry Housing Environmental Seminar: Proceedings 195
  - Poultry Keeping in Tropical Areas 196
  - Poultryman's Manual 198
  - Poultry Manure and Its Disposal 192
  - Poultry Production (Bundy) 192
  - Poultry Production (Card) 193
  - Poultry Science 157, 193
  - Poultry Slaughter 210
  - Poultry Tribune 206
  - Power to Produce; The Yearbook of Agriculture, 1960 29
  - Practical Farm Buildings 30
  - Practical Pig Production 180
  - Prairie Farmer 55
  - Prairie Farmer and WLS: The Burridge D. Butler Years 40
  - Precutting Seed Potatoes 88
  - Principles and Practices of Commercial Farming (University of Manitoba, Brandon) 18
  - Principles and Practices of Commercial Farming (University of Manitoba, Winnipeg) 14
  - Principles, Equipment and Systems for Corn Harvesting 83
  - Principles of Agronomy 65
  - Principles of Animal Environment 154
  - Principles of Dairy Farming, The 174
  - Principles of Farm Business Analysis and Management 18
  - Principles of Farm Machinery 28
  - Principles of Farm Management 11
  - Principles of Field Crop Production 80, 88, 89, 90
  - Principles of Plant and Animal Pest Control 104
  - Principles of Plant Breeding 75
  - Processing Equipment for Agricultural Products 28
  - Processing Vegetable Crops 136
  - Producer Markets for Maple Syrup in the United States 232
  - Producing and Marketing Catfish in the Tennessee Valley 227
  - Producing Farm Crops 81
  - Production and Marketing of Pigs, The 177
  - Production of Field Crops 80, 93
  - Productive Agriculture and a Quality Environment 48
  - Productivity Trends in a Sectoral Macro-Economic Model 6
  - Profitable Farm Management 13
  - Profitable Farm Mechanization 28, 88, 102
  - Profitable Pig Farming 178
  - Profitable Sheep Farming 185
  - Profitable Soil Management 68
  - Progressive Farmer 55
  - Progressive Fish-Culturist, The 235
  - Pruning Hardy Fruits 131
  - Purdue Farm Management Game Manual 11
- ## Q
- Quarterly Bulletin, Michigan Agricultural Experiment Station 232
  - Queen Rearing 219
- ## R
- Rabbit Production 215
  - Rabbits in Canada 234
  - Raising Feeder Pigs 179
  - Raising Small Animals for Fun and Profit 216
  - Ranch Economics 12
  - Ranchman 206
  - Rangeland Entomology 101
  - Rangeland Hydrology 71
  - Rangeland Management 92
  - Rangeland Reference Areas 93
  - Rangeman's News 115
  - Range Nutrition in an Arid Region 73
  - Range Resources of the Southeastern United States 91
  - Rational Grazing, A 95
  - Rearing Pacific Salmon in Saltwater Ponds 228
  - Register of New Fruit and Nut Varieties 145
  - Reluctant Farmer; The Rise of Agricultural Extension to 1914 39

- Remote Sensing; with Special Reference to Research in Agriculture and Forestry 38
- Report to the Fish Farmer 235
- Reproduction, Heredity and Sexuality 157
- Reproduction in Domestic Animals 157, 194
- Reproduction in Farm Animals 157
- Reserve Stocks of Grain 82
- Resource Allocation in Agricultural Research 35
- Rice 84
- Rice Breeding 85, 109
- Rice Journal 112
- Rice Situation 84, 113
- Role of Potassium in Agriculture 69
- Role of Water in Agriculture, The 72
- Roots of the Farm Problem 45
- S**
- Saline Irrigation for Agriculture and Forests 71
- Science and Practice of Mushroom Growing, The 144
- Scientific Feeding of Chickens, The 198
- Seaweed in Agriculture and Horticulture 131, 162
- Seed Crops 113
- Seeds, The Yearbook of Agriculture 109
- Seed World 112
- Selected Food and Agriculture Data Bases 53
- Selected Weeds in the United States 98
- Selecting and Raising Rabbits 216
- Selecting, Fitting, and Showing Swine 182
- Sheep and Goats 210
- Sheep and Lambs on Feed 210
- Sheep and Wool Science 185
- Sheep Breeder and Sheepman 206
- Sheep Farming 186
- Sheep Farming for Profit 185
- Sheep Husbandry and Research: A Bibliography 203
- Sheepman's Production Handbook, The 187
- Sheep Production and Grazing Management 188
- Shell Pesticide Directory 109
- Shepherd 206
- Small Fruit Culture 127
- Soft Fruit 124
- Soil and Water Physical Principles and Processes 67
- Soil Conservation Service, The 39
- Soil Fertility and Fertilizers 70
- Soil in Relation to Crop Growth 65
- Soilless Cultivation and Its Application 138
- Soilless Growth of Plants 137
- Soil Management 66
- Soil Management for Conservation and Production 66, 137
- Soil-Plant Relationships 65
- Soils 67
- Soils and Fertilizers 106
- Soils and Soil Fertility 68
- Soil Science 112
- Solid Manure Handling 201
- Some Principles and Practices of Farmer Cooperatives 25
- Sorghum 85
- Sorghum; a Bibliography of the World Literature Covering The Years 1930-63 107
- Sorghum Diseases in the United States 85
- Sorghum Production and Utilization 86
- Sources of Commodity Prices 53
- Soybean, The 88
- Soybean Digest 114
- Soybean Production Marketing and Use 113
- Soybeans 87
- Spatial Sector Programming Models in Agriculture 45
- Specific Nutrients in Animal Nutrition 162
- Spent Hops, Corn Silage, and Alfalfa Hay and Alfalfa Stems in Beef Cattle Nutrition 167
- Standard Encyclopedia of Horticulture, The 144

- State Agricultural Experiment Stations 38
- State and Federal Legal Regulation of Alien and Corporate Land Ownership 9
- Statistics of Crop Responses to Fertilizers 70
- Stockman's Handbook, The 154
- Straw and Concentrate Diets for Intensive Beef Finishing 169
- Strawberry; a World Bibliography, 1920-1966, The 143
- Strawberry Diseases 126
- Strawberry Growing Complete 126
- Strawberry: History, Breeding, and Physiology, The 125
- Strawberry Production in Kentucky 125
- Strawberry: Varieties, Culture, Marketing, Pest Control, The 127
- Structure of the Fluid Milk Industry, The 176
- Study of Managerial Processes of Midwestern Farmers, A 41
- Successful Farming 56
- Sugar Cane, The 89
- Supplement to a Dictionary of Dairying, The 205
- Supplement to Market Structure, Institutions, and Performance of the Fluid Milk Industry 176
- Swine Housing and Waste Management 182
- Swine Production in Temperate and Tropical Environments 179
- Swine Science 178
- Symposium on Physiology of the Domestic Fowl 196
- Symposium (Second) on Protein Utilization by Poultry 198
- Symposium on Stone-Fruit Thinning 132
- Synopsis of Catfish Farming, A 225
- Systems Analysis in Agricultural Management 17
- T**
- Textbook of Fish Culture 224
- Theory and Dynamics of Grassland Agriculture 92
- Three Decades of Minnesota Lamb Feeding Research 186
- Tomato Report 148
- Tractors and Their Power Units 27
- Trade Practice Rules for the Rabbit Industry 216
- Training of Farmers, The 33
- Tree Fruit Production 132
- Tree Fruits for the Prairies 130
- Triticale: First Man-Made Cereal 84
- Tropical and Subtropical Agriculture 80, 90
- Trout Farming 227
- Trout Farming Handbook 228
- Turkey Industry: Structures, Practices, and Costs, The 194
- Turkeys 210
- U**
- U.S. Agricultural Policy 48
- U.S. Agriculture in a World Context 47
- United States-Canadian Tables of Feed Composition 161
- U.S. Census of Agriculture 61
- U.S. Fresh Market Vegetable Statistics, 1949-75 148
- U.S. Import Duties on Agricultural Products 61
- U.S. Trade Policy and Agricultural Exports 50
- Use of Biological Literature, The 110
- Use of Drugs in Animal Feeds 162
- Using Commercial Fertilizers 69
- V**
- Value of Agricultural Land, The 9
- Vegetables--Fresh Market 148
- Vegetables--Processing 148
- Vegetable Situation 148
- Ventilation of Poultry Houses, The 192
- Veterinary Handbook for Cattlemen 204
- Vinifera Wine Growers Journal, The 149
- Virus Diseases of Small Fruits and Grapevines 126
- Viruses, Vectors and Vegetation 77

## W

- Weed Abstracts 106
- Weed Biology and Control 98
- Weed Control Manual and Herbicide Guide 110
- Weed Identification and Control 97
- Weeds 98
- Weeds of the World 97
- Weekly Weather and Crop Bulletin 113
- What Farmers Read and Like; A Record of Experiments in Readership in Wallace's Farmer and Wisconsin Agriculture, 1938-61 41
- Wheat Abstracts 106
- Wheat and Wheat Improvement 84

- Wheat, Production and Utilization 84
- Wheat Situation 113
- Wine Institute Bulletin 150
- Work Study in Agriculture 33
- World Agriculture, A Bibliography of Bibliographies 51
- World Dictionary of Livestock Types and Varieties, A 205

## Y

- Yearbook of Agriculture 5
  - See also After a Hundred Years; Farmer's World; Power to Produce; Seeds
- Year-Round Sheep Nutrition and Feeding Programs 186



## SUBJECT INDEX

This index is alphabetized letter by letter. Underlined page numbers refer to main areas within the subject. "See" and "See also" references have been used sparingly, since it is the aim of the author to be as specific as possible.

### A

- Abortion in swine 182
- Accademia Nazionale di Agricoltura 71
- Acreage allotments 6, 84
- Adult education 33, 35
- Aflatoxins 87, 103
- African honey bee 220
- Agribusiness. See Agriculture, economic aspects
- Agricultural administration, 45, 47
  - mathematical models 45
- Agricultural chemicals 20, 109
  - environmental aspects 20
  - handbooks 109
- Agricultural credit 12, 15, 20, 154
- Agricultural ecology 3, 91, 92, 188
- Agricultural education 33, 35, 36, 37
  - bibliography 35
- Agricultural education surveys 36
- Agricultural engineering 29
- Agricultural exhibitions 40, 178, 182
- Agricultural experiment stations 4, 14, 38, 167, 241
- Agricultural extension work 4, 12, 35, 36, 37, 38, 39
  - research 4, 36
- Agricultural implements 12, 14, 15, 16, 19, 28, 29, 30, 80
- Agricultural innovations 28, 34, 35, 171, 241
- Agricultural instruments 27
- Agricultural laboratories 199
- Agricultural laborers 6, 26, 27, 171, 177
  - See also Dairy workers; Livestock workers
- Agricultural laws and legislation 4, 15, 97
- Agricultural machinery 16, 80, 119, 127
- Agricultural pests 97, 100
- Agricultural price policy 24
- Agricultural prices 12, 24, 53, 82
- Agricultural price supports 47, 87, 173
- Agricultural Research Service 58
  - directories 58
- Agricultural societies 43, 61, 62
  - bibliography 43
  - periodicals 43, 61, 62, 114-15, 148-50, 207, 234, 235
  - See also Farm Bureau; Patrons of husbandry
- Agriculture
  - accounting 18, 21, 22, 65, 80
  - authorship 40
  - bibliography 51, 52, 107
  - costs 20

- dictionaries 52
  - economic aspects 4, 6, 7, 14, 44, 45, 46
  - finance 19, 21, 22
  - information services 34, 35, 41
  - mathematical models 45, 47, 65, 196
  - mathematics 18, 20
  - periodicals 40, 41, 240
  - safety regulations 59, 60
  - social aspects 6
  - statistical methods 60, 61
  - taxation 21
  - tropics 80, 90
  - yearbooks 109
  - Agriculture, cooperative 24-25
    - law 25
    - management 25
    - statistics 24
  - Agriculture and state 4, 44-49, 50, 86
  - Agriculture as a profession 7, 35, 36, 79, 178
  - Alfalfa 76, 92, 93
    - disease and pest resistance 92
  - Alfalfa as feed 92, 167
  - Alfalfa breeding 92
  - Alien property 10
  - Almond 121, 128, 131
  - American Association of Avian Pathologists 199
  - American Association of Cereal Chemists 84
  - American Association of Land-Grant Colleges and State Universities 34
  - American Potash Institute 69
  - American Society of Agricultural Engineers 224
  - American Society of Agronomy 91
  - American Society of Civil Engineers 105
  - American Society of Farm Managers and Rural Appraisers 16
  - Animal genetics 156, 157, 168
  - Animal housing 154
    - See also specific kinds of animals
  - Animal industry 153, 156, 157, 163, 164, 168, 208
    - business aspects 154
    - economic aspects 164
    - law and legislation 163, 164, 168
    - periodicals 208
  - Animals, habits and behavior of 154, 155, 157
  - Animal waste 20, 69, 155
    - bibliography 203
    - environmental aspects 20, 69, 155, 194, 201
  - Antibiotics in animal nutrition 167, 187, 197
  - Apple 120, 121, 122, 128, 129, 130, 131, 132, 147
    - economic aspects 122, 128, 130
    - handling 131
    - history 132
    - marketing 121, 122
    - packing 121
    - periodicals 147
    - storage 121
    - varieties 128, 132
  - Apple, Great Britain registers 14
  - Apricot 121, 124, 128, 131
  - Arid pasture and range investigation 91
  - Arid regions 73, 74
    - research 73
    - water supply 74
  - Arid regions agriculture 72, 73, 74, 94
  - Arid regions research institutions directories 108
  - Artificial insemination 156, 157, 178, 222
  - ASAE-SAE standards 28
  - Asparagus 135
  - Atkinson, William 41
  - Atlantic Council of the United States 47
  - Australian deserts. See Deserts of Australia
  - Australian Sheep and Wool Conference 187
  - Avocado varieties 123
- ## B
- Bacteria, phytopathogenic 99
  - Bacterial diseases of plants 78, 83



Barley 82  
 Barley as feed 169  
 Barns 31  
     See also Dairy barns; Goat barns  
 Bee culture 217-21, 239, 240, 241,  
     242  
     bibliography 219, 220  
     economic aspects 220, 221  
     equipment and supplies 217, 218,  
     219, 220  
     laws and legislation 217, 218  
     periodicals 233, 234  
     queen rearing 219  
 Beef cattle 156, 157, 162, 165-69,  
     204  
     economic aspects 166, 168  
     feeds and feeding 94, 165, 167,  
     168, 169, 175  
     judging 164, 168  
     periodicals 206  
 Beef cattle breeding 168  
 Beef cattle housing and equipment 30,  
     165, 168  
 Beef Cattle Short Course 165  
 Beef consumption 166  
 Bee-Keepers Act 218  
 Bees 217-22  
     diseases 221  
     swarm (packaged) 221  
 Beet pests 89  
 Beets and beet sugar 89  
     economic aspects 89  
     fertilizers and manures 89  
     harvesting 89  
     irrigation 89  
     transportation 89  
 Bentley, Maxwell 137  
 Bentley system 137  
 Berries 125, 240  
     irrigation 125  
 Blackberries 120, 122, 125  
 Blueberries 125-26, 127  
     diseases and pests 125, 126  
     harvesting 126  
     marketing 126  
     preservation 126  
     storage 126  
 Boars 179, 180  
 Botany 79, 110, 111  
     classification 79

    dictionaries 110, 111  
 Boyce Thompson Institute 106  
 British Egg Marketing Board 196,  
     198  
 Broccoli 136  
 Broilers (poultry) 191, 197, 206,  
     210  
     bibliography 197  
     mathematical models 191  
     periodicals 206, 210  
     research 197  
 Broom-corn 85  
 Brussels sprouts 136  
 Budget in farm management 13, 15,  
     20, 21, 22, 172, 177  
 Buiret 175  
 Bulls 168, 172, 173  
  
 C  
 Cabbage 81, 136  
     diseases and pests 136  
     fertilizers and manures 136  
     harvesting 136  
     varieties 136  
 Cabbage breeding 136  
 California Catfish Conference 224  
 California, University of. Department  
     of Fish and Game 224  
 Calves 171-2  
 Canadian Farm Management Data  
     System (CANFARM) 217  
 Capper, Arthur 49  
 Catfish 224, 225, 226, 228  
 Catfish Farmers of America 224  
 Cattle 158, 160, 166, 173  
     herdbooks 173  
     history 158  
 Cattle brands 169  
 Cattle breeding 157, 165, 167, 168  
 Cattle guards 32, 165  
 Cattle houses and equipment 32, 165  
 Cattle tick 166-67  
 Cattle trade 167, 168  
 Cauliflower 136  
 Center for Agricultural and Economic  
     Development, Iowa State  
     University 6, 45, 46, 47  
 Center for Tropical Agriculture 161  
 Central Association of Bee-Keepers  
     218

Chelation therapy 171  
 Cherry 120, 121, 128, 129, 130, 131, 147  
     diseases and pests 129  
     periodicals 147  
     varieties 129  
 Chevron Chemical Company 83, 89  
 Chromosome numbers 80  
 Citron 123  
 Citrus fruits 122, 123-24, 147  
     cooperative marketing 123  
     diseases and pests 124  
     economic aspects 123  
     harvesting 123, 124  
     irrigation 124  
     packing 124  
     periodicals 147  
     varieties 123  
 Cold frame 124, 141  
 Commodity Exchange Authority 196  
 Commonwealth Agricultural Bureaux of Great Britain 162  
 Communicable diseases in animals 162, 163  
 Communication in agriculture 40, 48  
 Compost 241  
 Concrete construction 174  
 Conference on Goals and Values in Agriculture 6  
 Conservation Society of America, Southwest Region 224  
 Consiglio Nazionale delle Ricerche 71  
 Contour farming 67  
 Contracts agricultural 7, 8, 154  
 Cooperative agriculture. See Agriculture, cooperative  
 Cooperative marketing of farm produce 23  
 Cooperative marketing of milk 176  
 Corn 69, 76, 82, 83, 95, 100, 101, 111  
     cooperative marketing 82  
     disease and pest resistance 76  
     diseases and pests 83, 100, 101, 111  
     fertilizers and manures 69  
     harvesting 83  
 Corn blight epidemic, 1970 77  
 Corn Congress 83

Corn silage 83  
 Cottonseed meal as feed 175-76  
 Council of State Governments 201  
 Country life 239-42  
 County agricultural agents 19, 39, 52  
     directories 52  
 Cover crops 123, 124  
 Cow pools 172  
 Cow rental costs 171  
 Cows 160, 162, 173, 175  
 Cow testing 169, 173, 175  
 Cranberries 125, 126, 127, 147  
     cooperative marketing 125  
     diseases and pests 126  
     periodicals 147  
 Crop Dryer Manufacturers Association 28  
 Cropping systems 66, 79, 80, 85, 174, 189  
 Crops and climate 79, 108  
     bibliography 108  
 Crop Science Society of America 91  
 Crop waste research 159  
 Crop yield statistics 70  
 Cucumbers 135  
 Cultivators, effect on soil 66  
 Currants 120, 122, 125, 127  
 Customer service 154

## D

Dairy barns 173, 176  
     sanitation 176  
 Dairy cattle 164, 172, 173, 175, 204, 241  
     feeds and feeding 173, 175  
     judging 164  
 Dairy cattle breeders' societies 172, 173, 174  
 Dairy cattle breeding 156, 157, 172, 173  
 Dairy cattle breeds 158, 171, 173, 174, 176  
 Dairy Cattle Housing Committee, Wisconsin 201  
 Dairy floors 174  
 Dairying 11, 12, 18, 172, 174, 175, 176, 203, 205, 206, 209  
     abstracts 203

accounting 172  
 apparatus and supplies 172  
 dictionaries 205  
 periodicals 206, 209  
 production standards 172, 174  
 records and correspondence 172  
 simulation methods 11  
 Dairying in Australia 173  
 Dairying in New Jersey 176  
 Dairying in New York (state) 176  
 Dairy laws 172, 176  
 Dairy Marketing Research Fund 176  
 Dairy products and cooperative market-  
   ing 23, 172, 176  
 Dairy waste 172  
 Dairy workers 171  
 Date varieties 123  
 Decision making in agriculture 11, 12,  
   15  
 Dentition in swine 181  
 Department of Agriculture. See U.S.  
   Department of Agriculture  
 Department of Commerce. See U.S.  
   Department of Commerce  
 Department of Agriculture, Manitoba  
   217  
 Desert ecology 74  
 Desert fauna 74  
 Desert flora 74  
 Desert locust 99  
 Desert research 74  
 Deserts of Australia 73, 74  
 Deserts of North America 74  
 Deserts of the United States 74  
 Desert soils 74  
 Dikes 71  
 Ditches 71  
 Domestic animals 7, 8, 12, 13, 14,  
   15, 153, 154, 157, 159, 160,  
   162, 163, 240, 241  
   behavior 155, 157  
   dictionary 205  
   economic aspects 156, 159  
   feeds and feeding 153, 154, 158,  
   160, 162  
   transportation 8, 163  
 Domestic animals, diseases and physi-  
   ology. See Veterinary medi-  
   cine  
 Double cropping 95  
 Drainage 29, 65, 67, 71-74, 105,  
   241

abstracts 105  
 Drainage engineering 72  
 Drainage research 71  
 Drylands Research Institute 74  
 Dual purpose cattle 157, 158  
 Ducks 192, 193, 198  
 Dunbar Forest Experiment Station,  
   Michigan 232  
 Durum wheat 84  
 Dwarf fruit trees 128, 132

## E

Earth dams 227  
 Economics information services 11,  
   13  
 Education, cooperative 28, 33  
 Egg production 191, 192, 193, 195,  
   206, 210, 211, 239  
   periodicals 206, 210, 211  
   records and correspondence 191,  
   193  
 Eggs 23, 191, 193, 194, 195  
   cooperative marketing 23, 191,  
   193, 194, 195  
   grading 193  
   hatchability 194  
   incubation 193, 195  
   prices 196  
   statistics 193  
 Electricity in agriculture 14, 240,  
   241  
 Electronic data processing and agri-  
   culture 12, 21, 172, 173  
 Eminent domain 10  
 Ensilage 27, 93, 95, 160, 172,  
   174, 186  
 Entomological Laboratories, University  
   of Leningrad 99  
 Entomology 109, 143  
   abstracts 143  
   yearbooks 109  
 Environmental engineering (buildings)  
   15, 27, 154, 155, 196  
   research 155  
 Environmental Protection Agency 180,  
   201  
 Ethyl Corporation 6  
 European Economic Community 81  
 Ewes 185, 186  
 Export marketing 61, 82, 195

## F

- Family farms 5, 14, 58
  - management 14
  - periodicals 58
- Farm Bloc 49
- Farm buildings 10, 12, 14, 15, 30-  
32, 154, 163
  - air conditioning 154, 163
  - contracts and specifications 31
  - heating and ventilation 154
- Farm Bureau 43
- Farm corporations 5, 7, 10
- Farm engines 28
- Farm equipment 12, 15, 28, 29, 144,  
241
  - maintenance and repair 12, 15
  - yearbooks 144
- Farmers 7
- Farm Foundation 46
- Farmhouses 32, 239
  - repair and reconstruction 239
- Farm income 5
- Farm Journal 41
- Farm law 8
- Farm life 4, 21, 22, 44, 241
  - records and correspondence 21, 22
- Farm management 4, 10, 11, 12, 13,  
15, 16, 17, 18, 21, 24, 44,  
72, 81, 240
  - financial aspects 12, 72, 81
  - periodicals 54-61
  - records and correspondence 12, 13,  
15, 18, 21, 240
  - simulation methods 11, 17
- Farm management services 10, 16
- Farm mechanization 16, 27, 28
  - costs 16, 18
  - economic aspects 27
- Farm ownership 4, 16, 17
- Farm policy. See Agricultural admin-  
istration
- Farm ponds 241
- Farm press 34, 40-41
  - promotion of agricultural innovations  
34
  - study of 40
- Farm produce 12, 17, 22, 23
  - economic aspects 23
  - marketing 12, 17, 22, 23
- Farm production 4, 58
  - periodicals 58
- Farm production quotas 47, 49, 84
- Farm rents 9, 16, 17, 21
- Farm roads 32
- Farms 7, 10, 13
  - size of 174, 179, 180, 240
  - valuation 10, 13
- Farm shops 31, 32
- Farm supply industries 4, 11
- Farm tenancy 12, 14, 15, 16
- Farm Writers' Congress 40
- Father-son farm operating agreements  
13, 14
- Feed additives 167
- Feeding and feeds, reviews 203
- Feeding research 176
- Feedlots 160, 165, 166, 167, 178,  
186, 206, 208
  - periodicals 206, 208
- Feed processing 159, 161
- Feeds 27, 159-67, 171, 174, 175,  
181, 198, 206
  - analysis 174
  - composition 159, 161, 167, 175,  
181, 187
  - law and legislation 159, 198
  - nomenclature 159, 167
  - periodicals 206
  - statistics 160
  - tables and calculations 161
- Feed utilization efficiency 16, 153,  
160, 168, 179, 191
- Fences 8, 31, 32, 67, 95, 165,  
172, 177, 185
- Fertilization of plants 20, 67, 69
- Fertilization of plants by insects  
75, 101, 121, 127, 130,  
217, 218, 219, 220, 221
- Fertilizer industry 69
- Fertilizers and manures 30, 66, 67,  
69-70, 107, 192, 241
  - abstracts 105, 106
  - bibliography 107
  - economic aspects 69
  - law and legislation 70
  - research 66, 70
  - mathematical models 70
- Field crops 79-90, 105, 112, 113,  
241
  - abstracts 105
  - periodicals 112, 113
- Field experiments, history 38
- Fig 121, 124, 128

Fish 224, 225, 226, 227, 229  
 diseases and pests 227, 229  
 ecology 224, 226  
 feeding and feeds 225, 226  
 genetics 229  
 Fish, dressing of 242  
 Fish culture 85, 223-30, 233, 240  
 bibliography 233  
 economic aspects 229  
 equipment and supplies 227, 229  
 periodicals 233, 234, 235  
 reference books 223, 229  
 Fish Farming Conference 225  
 Fish ponds 223, 225, 228  
 Florida Citrus Exchange, The 123  
 Florida citrus industry 124  
 Florida, University of. Department of  
 Animal Science 161  
 Flow charts 17, 156  
 Food and Agriculture Organization of  
 the United Nations (FAO)  
 225  
 Food consumption 12  
 Food storage pests 81, 101  
 Food supply 6, 46, 47  
 Forage plants 69, 73, 79, 86, 91,  
 92, 93, 94, 102, 166, 174,  
 187  
 abstracts 105  
 breeding 76  
 diseases and pests 102  
 economic aspects 73, 93  
 fertilizers and manures 94  
 research 91  
 varieties 93  
 Free trade and protection 50  
 Fresh fruit market 124-5  
 Frost protection 124, 127  
 Fruit 121, 124, 127, 128, 129, 130,  
 131, 132, 145, 147  
 harvesting 132  
 marketing 132  
 packing 121, 124  
 periodicals 147  
 preservation 121  
 pruning 124, 127, 128, 129, 130,  
 131, 132  
 research bibliography 131  
 storage 132  
 diseases and injuries 131  
 varieties, registers 145  
 Fruit breeding yearbook 144

Fruit culture 12, 72, 102, 121, 122,  
 123, 146, 240, 241  
 accounting 121  
 diseases and pests 102  
 irrigation 72  
 periodicals 122, 146  
 water requirements 122  
 Fruit processing 121, 125, 130  
 Fruit ripening 131  
 Fruit thinning 129, 130, 132  
 bibliography 129  
 Fruit trees 122, 128, 130, 132  
 diseases and pests 130  
 fertilizers and manures 128, 132  
 for prairies 130  
 Fungi, pathogenic 78  
 Fungicides 102, 104  
 Fungi in agriculture 81, 83  
 Fungus insects 99  
 Futures. See Short selling

## G

Game and game-birds, dressing of  
 242  
 Gardening encyclopedias and diction-  
 aries 145  
 Geese 192, 193, 198  
 Geneva Double Curtain system 127  
 Georgia Agricultural Commodity Com-  
 mission for Peanuts 107  
 Gericke method 138  
 Goat barns 189  
 Goat breeds 158, 189  
 Goats 162, 189, 206, 210, 242  
 feeding and feeds 162  
 judging 189  
 periodicals 206, 210  
 Goat's milk, records and correspon-  
 dence 189  
 Gooseberries 120, 122, 125, 127,  
 Government and agriculture. See  
 Agriculture and state  
 Grain 30, 73, 79, 81, 82, 112,  
 240, 241  
 diseases and pests 81  
 drying 81  
 economic aspects 73, 81  
 grading 81, 82  
 periodicals 112  
 prices 82  
 research 82

standards 84  
 storage 30, 82  
   diseases and pests 81  
   transportation 82  
 Grain breeding 76, 82  
 Grain inspection 81  
 Grain trade regulation 82  
 Grange. See Patrons of husbandry  
 Grapefruit 123  
 Grapes 122, 124, 126, 127, 128  
   diseases and pests 126  
   fertilizers and manures 124  
   harvesting 124  
   mulching 124  
   precooling 128  
   pruning 124, 127, 128  
   ripening 124  
   varieties 127  
 Grasses 79, 81, 93, 94, 166, 168,  
   240, 241  
   research 94  
   varieties 93  
 Grassland ecology 92  
 Grass productivity 95  
 Grass silage 93  
 Grass tetany 94  
 Grazing 73, 92, 95, 166, 174, 185,  
   187, 188  
 Grazing districts 5, 95, 166  
 Greenhouse management 137  
 Greenhouse plants 102, 138  
   diseases and pests 102  
 Green houses, heating and ventilation  
   138  
 Greenhouse workers 138  
 Green manuring 66, 241  
 Growth (plants) 76, 80, 91  
 Growth regulators 80, 98

## H

Harvesting machinery 28, 83, 90,  
   121, 131  
 Hawaiian Institute of Marine Biology  
   223  
 Hay 92, 93, 172, 186  
   drying 172  
   harvesting 92  
   standards 92  
 Hay as feed 160  
 Hay baling 92

Haying equipment 92  
 Hebrew University, Faculty of Agricul-  
   ture 68  
 Heifers 172, 175  
 Herbicides 97, 98, 103, 104, 110  
   guides 110  
 Honey 218, 219, 222, 235  
   periodicals 235  
 Honey plants 219, 220  
 Horticultural research 119  
 Horticulture 143, 145, 147  
   abstracts 143  
   bibliography 145  
   directories 145  
   encyclopedias and dictionaries  
     144-45  
   periodicals 147  
 Horticulture as a profession 138  
 Horticulturists, biography 145  
 Huckleberries 125  
 Hybrid corn 33, 82  
 Hybridization, vegetable 75  
 Hybrid sorghum 85  
 Hybrid sugar beets 89  
 Hydroponics 137-38

## I

Import quotas of dairy products 173  
 Industrialization 4  
 Information and retrieval systems,  
   agriculture 53-54  
 Insect radiosterilization 104  
 Insect chemosterilization 104  
 Insect control 98-102, 104, 126,  
   127, 186  
   biological control 98, 100, 101,  
     102, 104  
 Insecticides 101, 103, 104, 110,  
   130, 163  
   dictionaries 110  
 Insect-plant relationships 99, 100,  
   101  
 Insects 98-102, 144  
   classification 101  
   diseases, study and teaching 99  
   identification 99, 102  
   physiology yearbooks 144  
   pictorial works 102  
 Insects, effect of day length on, re-  
   search 99  
 Insects, injurious and beneficial 100,



101, 102, 122, 135, 137  
 Insects as carriers of plant diseases 99, 103  
 Insulating materials 192  
 Insurance, agricultural  
   crops 12, 15  
   livestock 12, 15  
 Insurance, life 19  
 International Agricultural Congress 218  
 International Commission for Horticulture and Registration 146  
 International Conference on Arid lands in a Changing World 73  
 International Dairy Federation 205  
 International Hydrological Decade 74  
 International Society of Horticultural Science 119  
 International Symposium on Soil-Water Physics and Technology 68  
 International Union of Food Science and Technology 84  
 Irrigated acreage 72  
 Irrigation 12, 29, 65, 67, 71-74, 94, 105, 112, 124, 125, 127, 130  
   abstracts 105  
   costs 72  
   management 71, 72  
   periodicals 112  
 Irrigation engineering 71  
 Irrigation farming 85  
 Irrigation water 67

## K

Kale 81, 136  
 Kohlrabi 136  
 Kennedy round 50  
 Kumquats 123

## L

Labor productivity 16  
 Labor supply 6, 26, 59, 180  
   periodicals 59  
 Lamb (meat) marketing 186  
 Lambs 7, 185-6, 210  
   feeding and feeds, research 186  
   hogget rearing 185  
   periodicals 210  
 Land 3, 5, 6, 9, 11, 48, 241

  classification 48  
 Land-Grant colleges. See State Universities and Colleges  
 Landlord and tenant 16  
 Land reform 4  
 Land tenure, United States law 8, 9  
 Land titles, registration and transfer 3, 8  
 Land value taxation 3, 13  
 Leases 16, 17  
 Legal instruments 8  
 Legume research 94  
 Legumes 101, 160, 166, 179  
 Lemons 123  
 Lettuce 136  
   diseases and pests 136  
   fertilizers and manures 136  
   harvesting 136  
   irrigation 136  
   seed 136  
   varieties 136  
 Lettuce breeding 136  
 Lettuce thinning 136  
 Library catalogs 54  
 Limes 123  
 Liming of soils 70, 125, 241  
 Linear programming 11, 16, 17, 18, 21, 178  
 Livestock Breeders' Associations 154, 158  
 Livestock breeds 154, 156  
   periodicals 154  
 Livestock housing 154, 155, 162, 201  
   heating and ventilation 162  
   research 155  
 Livestock in arid regions 74  
 Livestock workers 155  
 Lobster culture 229  
 Loganberries 125

## M

Machinery-plant relationships 80  
 Machinery-soil relationships 66, 80  
 Mail order business 240  
 Management games 11  
 Manchester, University of 6  
 Mangel 81

Mango 123  
 Manpower policy 26, 121  
 Manure handling 31, 155, 201  
 Maple sugar 239  
 Maple syrup 231, 232, 239  
 Mariculture 228, 229  
 Marine algae as feed 162  
 Marine algae as fertilizer 131  
 Marketing 4, 9, 24  
     law and legislation 9, 24  
     social aspects 4  
 Marketing of livestock 23, 153, 164  
 Meadows 91, 93, 94  
 Meat 168, 208  
     periodicals 208  
     quality 168  
 Medicated feeds 162  
 Melons 135  
 Migrant labor 26  
 Milk marketing orders 176  
 Milk prices, bibliography 176  
 Milk production 94, 173, 174, 209, 239  
     periodicals 209  
 Milk supply 172  
 Millet 82, 107  
     bibliography 107  
 Minerals in animal nutrition 161, 162, 167, 187  
 Monte Carlo method 17  
 Monterrey Technical Institute 74  
 Morrill, Justin Smith 37  
 Mulching 124, 127, 136  
 Mushroom culture 141, 144  
     periodicals 144  
     sanitation 141  
 Mushroom culture buildings 141  
 Mushrooms 141  
     diseases and pests 141  
     fertilizers and manures 141  
     statistics 141

## N

National Agricultural Library 54  
 National Association of Agricultural Agents 37  
 National Association of Land-Grant Colleges 201  
 National Commission for Farm Policy 46

National Committee on Animal Nutrition, Canada 167  
 National Committee on Animal Nutrition, United States 167  
 National Farm Institute 5  
 National Fertilizer Development Center 69, 113  
 National Peach Conference 130  
 National Poultry Improvement Plan 195  
 National Project in Agricultural Communications 34  
 National Research Council 161  
 National Strawberry Conference 127  
 Nectarine 121, 124, 128, 132  
     diseases and pests 132  
     harvesting 132  
     varieties 132  
 New England Institute for Medical Research 125  
 Night soil 69  
 Nitrogen fertilizers 70, 125  
 Nixon, John W. 26  
 North American deserts. See Deserts of North America  
 Nuts 121, 133, 145, 240, 241  
     quality 133  
     storage 133  
     varieties 133  
     registers 145  
 Nut tree research 133  
 Nut trees 122, 133  
     breeding 133  
     diseases and pests 133  
     history 133

## O

Oats 82  
 Occupational Safety and Health Administration 59-60  
 Office of Manpower Policy, Evaluation and Research 26  
 Oilseed plants 73  
 Oranges 123  
 Oregon State University Marine Science Center 229  
 Organic water pollutants 180



## P

Packers' and Stockyards Act 9  
 Papaya 123  
 Parasites of domestic animals 157, 163, 181, 191, 192, 193  
 Part time farming 17, 191, 240  
 Pasture, right of 8, 166  
 Pastures 73, 80, 81, 92, 93, 94, 160, 166, 168  
     fertilizers and manures 192  
     irrigation 73, 94, 187  
 Pathogenic fungi. See Fungi, pathogenic  
 Patrons of husbandry 43  
 Peach 121, 124, 128, 129, 130, 131  
     diseases and pests 129  
     economic aspects 130  
     harvesting 130  
     irrigation 129, 130  
     preservation 130  
     ripening 131  
     storage 130  
     varieties 131  
 Peanut breeding 87  
 Peanut products 86, 87  
 Peanut research, bibliography 107, 108  
 Peanuts 86-87, 103, 112  
     diseases and pests 86  
     fertilizers and manures 86  
     harvesting 86, 87  
     marketing 86, 87  
     periodicals 112  
     statistics 87  
     storage, diseases and injuries 87  
     varieties 86  
     water requirements 86  
 Pear 120, 121, 122, 128, 130, 131, 132  
 Pecan 121, 133  
     diseases and pests 133  
     varieties 133  
 Pelleted feed 161, 187, 197  
 Periodicals indexes 53  
 Pest control 80, 102-4, 112, 128, 240  
     periodicals 112  
 Pesticides 20, 98, 100, 102, 103  
     environmental aspects 20  
     statistics 102, 103  
 Philadelphia Society for the Promotion

    of Agriculture 35  
 Phosphatic fertilizers 70, 125  
 Photoperiodism 80, 99  
 Phytogeography 75  
 Phytopathogenic bacteria. See Bacteria, phytopathogenic  
 Pisani plan 50  
 Plant breeders 77  
 Plant breeding 75, 76  
 Plant diseases 77, 78, 80, 104, 106, 111, 113, 120  
     abstracts 106  
     handbooks 111  
     indexes 111  
     periodicals 113  
     transmission 77  
 Plant genetics 76, 77  
 Plant nematodes 78, 89, 104, 126, 127, 138  
 Plant parasites 83  
 Plant pathologists 77  
 Plant physiology 65, 77  
 Plant propagation 76, 110, 120, 122, 124, 126, 127, 130, 132, 133  
 Plants 78, 113, 144, 163  
     disease and pest resistance 78  
     patents 76  
     periodicals 113, 144  
 Plants, effect of day length on 80  
 Plants, effect of herbicides on 104  
 Plants, effect of insecticides on 104  
 Plants, effect of soil compaction on 66  
 Plants, effect of temperature on 129, 130  
 Plants, insecticidal 103, 104  
 Plants, protection of 100  
 Plant-soil relationships 65, 67, 69, 81, 90  
 Plant spacing 120, 125  
 Plant Variety Protection Act 113  
 Plum 120, 121, 128, 130, 131, 132  
 Poisonous plants 97, 103, 181  
 Pollination. See Fertilization of plants by insects  
 Pork 178, 183  
     prices 178  
     quality 183  
 Pork industry and trade, simulation

178  
 Potassium fertilizers 69, 125  
 Potato breeding 89  
 Potatoes 76, 88-89, 109  
     diseases and pests 88  
     economic aspects 88  
     harvesting 88, 89  
     storage 88  
     transplanting 88  
     varieties 89  
     yearbooks 109  
 Potato harvesting machinery 88  
 Potato products 88  
 Potato research 88  
 Poultry 7, 8, 23, 86, 160, 164, 191,  
     192, 193, 194, 195, 196,  
     197, 198, 199, 205, 206,  
     210, 211  
     behavior 191, 198  
     business aspects 193  
     cooperative marketing 195  
     directories 205  
     diseases and pests 191, 193, 194,  
         198, 199  
     feeding and feeds 86, 192, 193,  
         197, 198  
     feed utilization efficiency 191  
     marketing 23, 192  
     periodicals 191, 193, 195, 206,  
         210, 211  
     physiology 196  
     records and correspondence 197  
     statistics 193, 195  
     storage 193  
     tropical conditions 196  
 Poultry, dressing of 242  
 Poultry breeders 193  
 Poultry breeding 156, 194, 198  
 Poultry breeds 191  
 Poultry Breed Societies 191, 204  
     standards 204  
 Poultry houses and equipment 31, 154,  
     165, 191, 193, 196, 198  
     heating and ventilation 154, 191,  
         192, 196  
 Poultry industry 193, 195  
     costs 193, 195  
     finance 193  
 Poultry manure 192, 195, 202  
 Poultry plants, waste disposal 194

Prairie farmer 40  
 Property 8, 16, 168  
 Propolis, Therapeutic use 217  
 Proteins 87  
 Proteins in animal nutrition 158, 160,  
     161, 162, 178, 181, 198  
 Public Health Administration 162,  
     163  
 Public lands, United States 166  
 Purdue Farm Management Game 11

## R

Rabbit breeds 215  
 Rabbit hutches 215  
 Rabbit meat 216  
 Rabbits 156, 215-16, 233, 234  
     diseases 215  
     periodicals 233, 234  
     physiology 215  
     records and correspondence 216  
     statistics 216  
 Rabbits, dressing of 215  
 Radio in agriculture 40  
 Rain gauges 72  
 Ranches 12, 13, 168  
 Ranch management 13, 206  
     periodicals 206  
     records and correspondence 13  
 Range management 71, 74, 91, 92,  
     93, 101, 165, 166, 187  
 Range research 53, 93  
 Rape (plant) 81  
 Raspberries 122, 125  
 Rat control 90, 104  
 Reading research 41  
 Reclamation of land 241  
 Recycling of farm manure 158, 159  
 Recycling of poultry manure 159  
 Remote sensing systems 38, 52  
 Resources for the future 5, 38, 72  
 Rice 7, 82, 84-85, 100, 107, 112,  
     113  
     diseases and pests 100  
     marketing 85  
     periodicals 112, 113  
     research 85  
         bibliography 107  
     storage 85  
     terminology 85  
     varieties 84, 85

Rice breeding 85, 109  
     research yearbooks 109  
 Riparian rights 8  
 Roadside marketing 240, 241  
 Rockefeller Foundation 41, 47  
 Rodent control 81  
 Root crops 88-89, 102  
     diseases and pests 102  
 Root crops breeding 76  
 Rotation of crops 81, 89, 93, 101,  
     136  
 Rotation of grazing 92  
 Rowett Research Institute 203  
 Rumen 175  
 Runoff 71, 180  
 Rural families research 27  
 Rural-urban interface 48  
 Rye (*secale*) 82, 84

**S**

Saline irrigation 71  
 Salmon culture 228  
 Seaweed. *See* Marine algae  
 Sedimentation and deposition research  
     72  
 Seed industry and trade 76, 80, 112,  
     113  
     periodicals 112, 113  
 Seed potato certification 89  
 Seed potato precutting research 88  
 Seeds 78, 80, 81, 110, 120, 240  
     bibliography 106  
     identification 76  
     storage 120  
     stratification 80  
 Semen, frozen 156  
 Semiarid regions 73  
 Sewage disposal 241  
 Shaddocks 123  
 Sheep 94, 156, 157, 160, 162, 164,  
     185-88, 203, 206, 210  
     diseases and pests 185, 186, 187  
     economic aspects 185, 186  
     feeding and feeds 94, 186  
     judging 164  
     marketing 187  
     periodicals 206, 210

    research, bibliography 203  
 Sheep breeders' associations 186,  
     187  
 Sheep breeding 185, 186, 187, 206  
     periodicals 186, 187, 206  
 Sheep breeds 158, 185, 186  
 Sheep houses and equipment 31, 187  
 Sheep milk 186  
 Sheep ranches 185  
 Shellfish culture 229  
 Shive method 138  
 Shore protection, law and legislation  
     229  
 Short selling 20, 24, 82, 196  
 Silos 165  
 Slaughtering and slaughter houses  
     177, 180, 208, 241  
     periodicals 208  
 Smith-Hughes Act 37  
 Smith-Lever Act 37, 39  
 Smithsonian Institution 52  
 Social pressure 4  
 Soil conservation 13, 39, 67, 122  
     laws and legislation 39  
 Soil conservation districts 39  
 Soil conservation services 4, 5, 38  
 Soil conservation services, California  
     224  
 Soil ecology 67  
 Soil erosion 68, 71  
 Soil fertility 66, 68, 70  
 Soil pollution 3  
 Soil research 53, 68  
 Soils 65, 67, 69, 106, 107  
     abstracts 106  
     bibliography 107  
     classification 67  
     nitrogen content 65  
     phosphorus content 65  
     potassium content 65, 69  
 Soils, salts in 3, 65, 68, 71  
 Soil science 112, 241  
     periodicals 112  
 Soil scientists 74  
 Soil structure 68  
 Soil surveys 65  
 Soil-water relationship 68  
 Sorghum 76, 82, 85-86, 95, 108,  
     bibliography 108

- diseases and pests 86
- economic aspects 86
- research 86
- varieties 85
- Sorghum as feed 86
- Sorghum breeding 85, 86
- Sorghum sugar 85
- Sorghum syrup 85, 239
- Sorgo 85
- Sows 177, 179, 180
- Soybean 69, 82, 87, 88, 107, 113
  - harvesting 88
  - marketing 82
  - nematodes bibliography 107
  - periodicals 113
  - records and correspondence 88
  - storing 88
  - weed control 97
- Soybean as feed
- Spraying and dusting in agriculture 97, 102, 104, 120, 124, 130, 132
  - costs 102
- Spraying and dusting residues in agriculture 3
- Sprinkler irrigation 71, 90
- Squash 135
- Standardized plant names 52
- State universities and colleges 5, 36, 37, 38, 39
- Stock and stock-breeding 154, 157, 158, 167, 203, 206
  - abstracts 203
  - periodicals 154, 206
- Stock inspection 168
- Stock judging 164
- Stock-poisoning plants 181
- Stock-range ecology 91, 92
- Stock ranges 73, 94, 166
  - research 73
- Stone fruit 122, 132
- Straw as feed 169
- Strawberries 122, 125, 126, 127, 128, 143
  - bibliography 143
  - diseases and pests 122, 126, 127
  - irrigation 127
  - marketing 125
  - reference books 127
  - varieties 125, 126, 127
- Strawberry breeding 125, 127
- Strawberry disease research 126
- Strawberry industry, Canada 127
- Strawberry industry, Kentucky 125
- Strawberry industry, Mexico 127
- Straw standards 92
- Sudan grass 85
- Sugar 7, 90, 108
  - bibliography 108
  - manufacturing and refining 90
- Sugarbeet Congress 89
- Sugarbeet seed 89
- Sugarbeet varieties 89
- Sugar cane 89-90, 100
  - diseases and pests 90, 100
  - harvesting 90
  - research 90
  - transportation 90
- Sugar cane breeding 90
- Sugar cane harvesting machinery 89
- Sugar maple diseases and pests 231
- Sweet corn 83
- Swine 86, 160, 162, 164, 177-84, 206, 209
  - anatomy 181
  - behavior 180
  - carcasses 177, 178, 180
  - cooperative marketing 178
  - diseases 177, 179, 181
  - economic aspects 179, 180
  - feeding and feeds 86, 160, 162, 178, 181
  - judging 164, 178, 182, 183
  - marketing 179
  - periodicals 206, 209
  - simulation methods 178
  - transportation 177
- Swine breeders' societies 177, 179
- Swine breeding 177, 179, 180, 181
- Swine breeds 158, 181
- Swine houses and equipment 31, 177, 178, 179, 180, 181, 182
- Swine records 179
- Swine waste 178, 180, 182
- Systems analysis 17

## T

- Tariff on farm produce 61
- Technology transfer 33-35
- Tennessee Valley Authority 69

Texas Technology University 196  
 Tillage 65, 66, 241  
 Tomatoes 139, 148  
     periodicals 148  
 Tractors 27, 28, 29, 60, 66  
     maintenance and repair costs 15  
     motors 27, 29  
         diesel 27, 28  
     safety measures 60  
     tires 66  
     wheels 66  
 Trafficability 66  
 Transportation and state 4  
 Trenching machinery 27  
 Trespass 8  
 Triticale 84  
 Tropical crops 69, 80, 100, 119  
     diseases and pests 100  
 Tropical fruit 119, 122  
 Trout culture 227, 228  
 Truck farming 120, 135, 136, 189  
 Turkeys 192, 193, 198, 210, 211  
     cooperative marketing 194  
     diseases 199  
     marketing 192  
     periodicals 210, 211  
 Tumips 81, 135

U

Uniform State Feed Bill. 159  
 United Nations Educational, Scientific,  
     and Cultural Organization  
     (UNESCO) 71  
 U.S. Bureau of Commercial Fisheries  
     229  
 U.S. Department of Agriculture 4, 23,  
     36, 37, 39, 125, 167  
     Agricultural Research Service 4,  
         74  
     Economic Research Service 82  
     Strawberry Breeding Program 125  
 U.S. Department of Commerce. Eco-  
     nomic Development Adminis-  
     tration 224  
 U.S. deserts. See Deserts of the  
     United States  
 U.S. House of Representatives. Agri-  
     culture Committee 61  
 U.S. Senate. Agriculture and Forestry

    Committee 61  
 United States, economic conditions  
     6  
 University of California. See Cali-  
     fornia, University of  
 University of Florida. See Florida,  
     University of  
 Urban economics 4  
 Urbanization 3  
 Urban-rural migration 239-42

## V

Vaporization, heats of 154  
 Variegation 126  
 Vegetable breeding 136  
 Vegetable processing 136  
 Vegetables 12, 69, 102, 119, 135,  
     136, 146, 148, 240  
     diseases and pests 102, 135  
     economic aspects 136  
     fertilizers and manures 135, 136  
     harvesting 135  
     irrigation 136  
     periodicals 146, 148  
     storage 135  
     transplanting 136  
     varieties 135, 136  
     water requirements 135  
 Vegetables (Greenhouse) 138  
 Vegetable seed 136  
 Vertebrate pest control 104  
     See also Rat control  
 Veterinarians 98, 154, 162, 163,  
     171, 178, 181, 198, 199,  
     204  
 Veterinary medicine 163, 204  
     handbooks 204  
 Veterinary physiology 153, 154, 155,  
     181  
 Virginia Polytechnic Institute 161  
 Virginia State University 161  
 Virus diseases of plants 77, 78, 83,  
     88, 99, 100, 126, 129, 132  
 Virus-vector relationships 77  
 Vitamins in animal nutrition 162,  
     167, 187  
 Viticulture 127

### W

- Wages of dairy workers 171  
Wallace's Farmer 41  
Walnut 121, 131, 133  
    black walnut 133  
    English walnut 133  
    Persian walnut 131, 133  
Warmwater Fish Cultural Laboratories 224, 225  
War of the chicken 50  
Water, underground 71  
Water conservation 13, 68, 122  
Water in agriculture 72, 122, 187  
Water quality 3, 71  
Water resources development 72, 94  
Water reuse 228  
Watersheds 8, 71, 241  
    research 71  
Water supply, agricultural 94, 241  
Water table 72  
Weather periodicals 113  
Weed control 80, 81, 83, 87, 89, 90, 97, 98, 104, 110, 122, 124, 127, 130, 187  
    biological control 97, 98  
    manuals 110  
Weeds 97-98, 106  
    abstracts 106  
    identification 97  
Weed Science Society of America 98  
Weed seed 97  
Weights and measures 18, 19, 174  
    tables 18  
Welsh Plant Breeding Station of the University of Wales 72  
Western Governors' Conference 240  
Wetlands 48, 94  
Wheat (*Triticum*) 82, 84, 101, 106, 113  
    abstracts 106  
    bibliography 108  
    cooperative marketing 82  
    diseases 84  
    periodicals 113  
    pests 101  
    varieties 84  
Wheat as feed 84  
Wheat breeding 84  
Whey as feed 180  
Whitewash 193  
Withrow method 138  
WLS, Chicago 41  
Wood as fuel 242  
Woodlands 241  
Woods Hole Oceanographic Institution 223  
Work study. See Education, cooperative  
World Academy of Art and Science 71











